

EXHIBIT 71

Page 1

Volume I Pages 1-293

Exhibits 1-32

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IN RE JOHNSON & JOHNSON TALCUM

POWDER PRODUCTS MARKETING,

MDL NO.

SALES PRACTICES, AND PRODUCTS

16-2738(MAS)(RLS)

LIABILITY LITIGATION

VIDEOCONFERENCE DEPOSITION OF

SONAL SINGH, M.D., M.P.H

Thursday, April 4, 2024, 9:03 a.m.

BEECHWOOD HOTEL

363 Plantation Street

Worcester, Massachusetts 01605

-----REPORTER: Sonya Lopes, RPR, CSR-----

<p style="text-align: right;">Page 2</p> <p>1 APPEARANCES:</p> <p>2</p> <p>3 Ashcraft & Gerel, LLP</p> <p>4 Michelle A. Parfitt, Esq.</p> <p>5 1825 K Street, N.W., Suite 700</p> <p>6 Washington, D.C. 20006</p> <p>7 202.783.6400</p> <p>8 mparfitt@ashcraftlaw.com</p> <p>9 for Plaintiffs</p> <p>10</p> <p>11 Levin Papantonio Rafferty</p> <p>12 Christopher V. Tisi, Esq.</p> <p>13 316 South Baylen Street</p> <p>14 Pensacola, Florida 35202</p> <p>15 850.435.7000</p> <p>16 ctisi@levinlaw.com</p> <p>17 for plaintiffs</p> <p>18</p> <p>19 Skadden, Arps, Slate, Meagher & Flom LLP</p> <p>20 Zachary W. Martin, Esq.</p> <p>21 500 Boylston Street</p> <p>22 Boston, Massachusetts 02116</p> <p>23 617.573.4862</p> <p>24 zachary.martin@skadden.com</p> <p>25 for Defendants</p>	<p style="text-align: right;">Page 4</p> <p>1 I N D E X</p> <p>2</p> <p>3 WITNESS: SONAL SINGH, M.D., M.P.H</p> <p>4</p> <p>5 EXAMINATION BY: PAGE</p> <p>6 Mr. Martin 8</p> <p>7 Ms. Parfitt 275</p> <p>8</p> <p>9 EXHIBIT PAGE</p> <p>10 Exhibit 1, deposition notice.....9</p> <p>11 Exhibit 2, invoice.....14</p> <p>12 Exhibit 3, curriculum vitae.....18</p> <p>13 Exhibit 4, list of testimony.....31</p> <p>14 Exhibit 5, supplemental expert report of</p> <p>15 Sonal Singh, M.D., M.P.H.....34</p> <p>16 Exhibit 6, ACOG printout.....37</p> <p>17 Exhibit 7, National Cancer Institute</p> <p>18 PDQ printout.....41</p> <p>19 Exhibit 8, January 16, 2019 transcript of</p> <p>20 Sonal Singh, M.D., M.P.H.....42</p> <p>21 Exhibit 9, American Cancer Society</p> <p>22 printout.....47</p> <p>23 Exhibit 10, order from Court in Viagra</p> <p>24 case.....52</p> <p>25</p>
<p style="text-align: right;">Page 3</p> <p>1 APPEARANCES:</p> <p>2</p> <p>3 Also present: Luis Chu (via Zoom)</p> <p>4 Patrick Lyons (via Zoom)</p> <p>5 Tracy Finken (via Zoom)</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 5</p> <p>1 I N D E X</p> <p>2</p> <p>3 EXHIBIT PAGE</p> <p>4 Exhibit 11, February 2, 2023 transcript</p> <p>5 of Sonal Singh, M.D., M.P.H...57</p> <p>6 Exhibit 12, 2021 article by Nicolas</p> <p>7 Wentzensen, et al.....86</p> <p>8 Exhibit 13, 2023 article by Katie M.</p> <p>9 O'Brien, et al.....104</p> <p>10 Exhibit 14, 2019 article by Iwona M.</p> <p>11 Gabriel, et al.....117</p> <p>12 Exhibit 15, 2016 article by Daniel W.</p> <p>13 Cramer, et al.....127</p> <p>14 Exhibit 16, 2024 article by Julie E.</p> <p>15 Goodman, et al.....133</p> <p>16 Exhibit 17, 2020 article by Katie M.</p> <p>17 O'Brien, et al.....138</p> <p>18 Exhibit 18, 2018 report of Sonal</p> <p>19 Singh, M.D., M.P.H.....154</p> <p>20 Exhibit 19, 2020 Dana R. Gossett, M.D.</p> <p>21 editorial.....170</p> <p>22 Exhibit 20, 2016 study by Steven A.</p> <p>23 Narod.....179</p> <p>24 Exhibit 21, 2018 article by Wera</p> <p>25 Berge, et al.....187</p>

3 (Pages 6 - 9)

<p style="text-align: right;">Page 10</p> <p>1 MR. MARTIN: I am aware of the</p> <p>2 objections.</p> <p>3 MS. PARFITT: Thank you.</p> <p>4 MR. MARTIN: I'm not going to mark that</p> <p>5 as part of the file, but I'm aware of those.</p> <p>6 Q. But to the extent not barred by the</p> <p>7 objections of counsel, you've produced everything</p> <p>8 requested?</p> <p>9 A. That is correct.</p> <p>10 Q. Okay. Did you bring any additional</p> <p>11 materials with you today?</p> <p>12 A. Those are references -- those are all in my</p> <p>13 -- but, you know, I've scribbled on them. That's</p> <p>14 what it is.</p> <p>15 Q. But there's no documents in there --</p> <p>16 there's nothing in there that is not either in your</p> <p>17 reference list or in the Dropbox that Ms. Parfitt</p> <p>18 produced on Monday?</p> <p>19 A. No, as far as I know.</p> <p>20 Q. How did you prepare for the deposition</p> <p>21 today?</p> <p>22 A. I read my report, and I reviewed my report.</p> <p>23 I read my previous report. And where I had</p> <p>24 questions for myself, I went through those</p> <p>25 references and I, you know -- then yesterday</p>	<p style="text-align: right;">Page 12</p> <p>1 Dr. Cote, I was provided that. I skimmed through</p> <p>2 it, you know, to the extent I reviewed -- yes -- and</p> <p>3 have it.</p> <p>4 Q. I know you said you hadn't looked at your</p> <p>5 previous deposition in advance of today. Have you</p> <p>6 looked at that deposition since you gave it in</p> <p>7 January 2019?</p> <p>8 A. No.</p> <p>9 Q. Okay. To the extent you remember what you</p> <p>10 said in that deposition, is there anything you would</p> <p>11 change or that you don't stand by?</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 A. I think you'd have to, you know, point what</p> <p>14 specifics you're asking for. But in terms of the</p> <p>15 causal opinion, it is reflected in my expert report</p> <p>16 -- supplemental report.</p> <p>17 Q. Okay. We will -- we might look at specific</p> <p>18 parts --</p> <p>19 A. Sure.</p> <p>20 Q. -- later this morning. Beyond your two</p> <p>21 expert reports, are there any writings in which you</p> <p>22 set out opinions related to the purported</p> <p>23 relationship between talcum powder and ovarian</p> <p>24 cancer?</p> <p>25 A. No.</p>
<p style="text-align: right;">Page 11</p> <p>1 evening, I met with the counsel for two, three hours</p> <p>2 to discuss, prepare.</p> <p>3 Q. And when you say "counsel," is that the two</p> <p>4 counsel here in the room?</p> <p>5 A. That is correct.</p> <p>6 Q. And did you do that in person or over the</p> <p>7 phone?</p> <p>8 A. In person.</p> <p>9 Q. Okay. Did they give you any additional</p> <p>10 materials at that meeting?</p> <p>11 A. I don't recall.</p> <p>12 Q. Okay. You said you reviewed your two</p> <p>13 reports in this case. Did you review your prior</p> <p>14 deposition?</p> <p>15 A. I did not.</p> <p>16 Q. Okay. Have you at any point reviewed any</p> <p>17 of the depositions given by other experts in this</p> <p>18 litigation?</p> <p>19 A. I have.</p> <p>20 Q. Okay. Which experts?</p> <p>21 A. I think at the time of the initial</p> <p>22 deposition, I reviewed Dr. Diette.</p> <p>23 Q. Diette, I believe, yeah.</p> <p>24 A. Diette. Yeah. Sorry. His. And then for</p> <p>25 this deposition, I was provided Dr. Moorman. And</p>	<p style="text-align: right;">Page 13</p> <p>1 Q. In 2018 and '19, you were charging \$600 an</p> <p>2 hour. Is that still how much you charge?</p> <p>3 A. A little bit more. 650.</p> <p>4 Q. 650. Okay.</p> <p>5 A. Inflation.</p> <p>6 Q. Understood. Understood. And beyond your</p> <p>7 hourly rate, are there any other charges that you</p> <p>8 have charged plaintiffs' counsel?</p> <p>9 A. No.</p> <p>10 Q. No retainer?</p> <p>11 A. No.</p> <p>12 Q. Okay. Have you traveled at all for this</p> <p>13 litigation?</p> <p>14 A. Yesterday I had to travel because of the</p> <p>15 weather. So that wasn't preplanned. I stayed in</p> <p>16 the hotel so that I could make it in time for you.</p> <p>17 That's all.</p> <p>18 Q. Okay.</p> <p>19 A. I live a little bit out of town.</p> <p>20 Q. Never traveled outside of Massachusetts</p> <p>21 for --</p> <p>22 A. No. No.</p> <p>23 Q. -- for the case. Okay. I have Exhibit 2</p> <p>24 here. This is something that was produced to us on</p> <p>25 Monday by Ms. Parfitt.</p>

<p style="text-align: right;">Page 14</p> <p>1 (Invoice, Exhibit 2, marked)</p> <p>2 Q. Does this invoice reflect all of the work</p> <p>3 that you have done on this case since your last</p> <p>4 deposition in January of 2024 (verbatim)?</p> <p>5 MR. TISI: I'm sorry. I didn't realize</p> <p>6 --</p> <p>7 MR. MARTIN: I'm sorry. This is two-</p> <p>8 sided, for anyone who hasn't seen that.</p> <p>9 A. Yeah. This reflects the invoice I</p> <p>10 submitted at that time. I haven't submitted any</p> <p>11 other invoices.</p> <p>12 Q. That wasn't quite my question.</p> <p>13 Does that reflect all the work you've</p> <p>14 done --</p> <p>15 A. No.</p> <p>16 Q. -- since -- okay. Does it reflect all the</p> <p>17 work you had done from January of 2019 through the</p> <p>18 date of this invoice?</p> <p>19 A. Yeah.</p> <p>20 Q. Okay. So you didn't do any work after your</p> <p>21 deposition and before September of last year?</p> <p>22 A. No.</p> <p>23 Q. Okay. Can you estimate approximately how</p> <p>24 many hours you've spent on this case since the date</p> <p>25 of this invoice, which is November 15th of 2023?</p>	<p style="text-align: right;">Page 16</p> <p>1 A. I cannot. I mean, it's -- what -- 2018,</p> <p>2 2019? Yeah.</p> <p>3 Q. Your last deposition was January of 2019.</p> <p>4 A. I cannot estimate.</p> <p>5 Q. Okay. Not even a ballpark number?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 A. No, not really.</p> <p>8 Q. Do you know if it was more or less than a</p> <p>9 hundred thousand dollars?</p> <p>10 MS. PARFITT: Objection. Form.</p> <p>11 A. Probably more.</p> <p>12 Q. Do you know if it's more or less than</p> <p>13 \$200,000?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 A. I don't know that.</p> <p>16 Q. Approximately what percentage of your</p> <p>17 income last year came from litigation work?</p> <p>18 MS. PARFITT: Objection. Form.</p> <p>19 A. Last year?</p> <p>20 Q. The year 2023.</p> <p>21 MS. PARFITT: Same objection.</p> <p>22 A. I can't recall the specifics of it.</p> <p>23 Q. Okay. Again, more or less than 30 percent?</p> <p>24 MS. PARFITT: Objection. Form.</p> <p>25 A. You know, I have other sources of income.</p>
<p style="text-align: right;">Page 15</p> <p>1 A. I would say 40, 45 hours. I don't have an</p> <p>2 exact number.</p> <p>3 Q. That's fine. That's ballpark. So if I</p> <p>4 were -- if I could do mental math, I probably</p> <p>5 wouldn't be a lawyer. But that reflects</p> <p>6 approximately -- 650 times 45 -- \$29,000 worth of</p> <p>7 work since then. Does that seem right?</p> <p>8 Okay. So plus approximately 42, \$43,000,</p> <p>9 that brings the grand total to somewhere in the</p> <p>10 neighborhood of \$70,000 of work since your past</p> <p>11 deposition.</p> <p>12 A. That is correct.</p> <p>13 Q. Okay. Have you done work related to talc</p> <p>14 litigation outside of the MDL?</p> <p>15 A. No.</p> <p>16 Q. Okay. So what we just talked about in this</p> <p>17 invoice reflects the entirety of your work on any</p> <p>18 litigation related to talc since your last</p> <p>19 deposition.</p> <p>20 A. That is correct.</p> <p>21 Q. Okay. What about litigation generally?</p> <p>22 Can you estimate how much you've received in money</p> <p>23 -- how much money you've received for litigation</p> <p>24 work since your last deposition in 2019?</p> <p>25 MS. PARFITT: Objection.</p>	<p style="text-align: right;">Page 17</p> <p>1 You know, I do trading. I do other work. So I</p> <p>2 don't keep track of -- I mean, I produced the</p> <p>3 invoices that you asked for.</p> <p>4 Q. What is your salary from the University of</p> <p>5 Massachusetts?</p> <p>6 MS. PARFITT: Objection. Form. What's</p> <p>7 the relevance? Relevancy. That has no relevancy.</p> <p>8 MR. MARTIN: It's relevant to</p> <p>9 credibility to get approximately what percentage of</p> <p>10 his income comes from litigation.</p> <p>11 MS. PARFITT: I object. You can ask the</p> <p>12 question with regard to the percentage of his</p> <p>13 income, if he knows that. I object to asking him</p> <p>14 what his salary is from the university. I instruct</p> <p>15 you not to answer that.</p> <p>16 MR. MARTIN: He didn't answer the</p> <p>17 question about percentage, which is why I was trying</p> <p>18 to get at it from a different angle. If you're</p> <p>19 instructing him not to answer, he can not --</p> <p>20 MS. PARFITT: I instruct him not to</p> <p>21 answer.</p> <p>22 Q. Do you have an estimation of your non-</p> <p>23 litigation income last year?</p> <p>24 MS. PARFITT: Objection. Form. It's</p> <p>25 the same question. Non-litigation income would</p>

<p style="text-align: right;">Page 18</p> <p>1 include salary.</p> <p>2 A. I didn't prepare for sort of, you know,</p> <p>3 monetary, which income from where. I produced what</p> <p>4 was here, and that's what I was prepared to answer.</p> <p>5 MR. MARTIN: I think it's relevant to</p> <p>6 credibility, but we'll move on.</p> <p>7 MS. PARFITT: Thank you.</p> <p>8 MR. MARTIN: Let's look at your CV.</p> <p>9 (Curriculum vitae, Exhibit 3, marked)</p> <p>10 Q. So this is the CV that was produced to us</p> <p>11 on Monday. And I believe it's current as of this</p> <p>12 month. Is there anything that looks not current to</p> <p>13 you in that?</p> <p>14 A. No.</p> <p>15 Q. Okay. So there are a couple of changes</p> <p>16 since the time of your last deposition that I want</p> <p>17 to talk about. The first is on page 1. And it's</p> <p>18 your role as associate professor in the division of</p> <p>19 health systems sciences. Okay. You started that</p> <p>20 role in October of 2022?</p> <p>21 A. Yeah. It was more, you know -- we were at</p> <p>22 Meyers. And it was more an incorporation than an</p> <p>23 institute into the school of medicine.</p> <p>24 Q. Okay. So just so I'm clear, it was more</p> <p>25 the creation of a formal division of health systems</p>	<p style="text-align: right;">Page 20</p> <p>1 A. Yes.</p> <p>2 Q. Okay. What did that course entail,</p> <p>3 generally?</p> <p>4 A. It entails starting out with first years,</p> <p>5 usually teaching them about study designs, how to</p> <p>6 review a case control study, cohort study,</p> <p>7 randomized trials, and, you know, bias, confounding.</p> <p>8 So it's -- yeah.</p> <p>9 Q. Just to be clear, when you say first-year</p> <p>10 students, you mean first-year medical students, not</p> <p>11 first-year residents.</p> <p>12 A. No. These are medical students. They</p> <p>13 could be nursing students as well.</p> <p>14 Q. Okay. Approximately how many students were</p> <p>15 in that class?</p> <p>16 A. I don't recall. You know, usually --</p> <p>17 sometimes it's 15.</p> <p>18 Q. And is there a reason that you stopped</p> <p>19 teaching the class in 2022?</p> <p>20 A. Yeah, there is. Because the class</p> <p>21 coincided with my clinical days so that it was sort</p> <p>22 of -- I had to choose between teaching.</p> <p>23 Q. The class is still existing. It's just</p> <p>24 taught by someone else?</p> <p>25 A. It is.</p>
<p style="text-align: right;">Page 19</p> <p>1 sciences?</p> <p>2 A. Exactly. Yes. It's very new. It's, you</p> <p>3 know.</p> <p>4 Q. It incorporates work you'd previously been</p> <p>5 doing at the university?</p> <p>6 A. Yeah.</p> <p>7 Q. Okay. Does it incorporate work from the</p> <p>8 Department of Family Medicine & Community Health,</p> <p>9 the Department of Quantitative Health Sciences, or</p> <p>10 both?</p> <p>11 A. So, you know, the way it was, we -- there</p> <p>12 was Meyers Health Institute maybe at that time that</p> <p>13 I was deposed. And the institute -- medical school</p> <p>14 brought in people who do health systems research</p> <p>15 into one institute. And that's why it's reflected</p> <p>16 there.</p> <p>17 Q. Actually, it's on the same page.</p> <p>18 A. Sure.</p> <p>19 Q. I'm sorry. No. It's not. It's on page 3,</p> <p>20 teaching and classroom activities. It looks like</p> <p>21 you started to teach a course at the medical school</p> <p>22 since your last deposition.</p> <p>23 A. That is correct.</p> <p>24 Q. And is "Clinical epidemiology for medical</p> <p>25 students" the name of that course?</p>	<p style="text-align: right;">Page 21</p> <p>1 Q. Can you guys flip to page 7, please?</p> <p>2 MR. TISI: Can I just say I'm getting a</p> <p>3 note that your voice is really muffled.</p> <p>4 MR. MARTIN: Off the record.</p> <p>5 (A break was taken)</p> <p>6 MR. MARTIN: Back on the record. So</p> <p>7 while we were off the record, Ms. Finken asked that</p> <p>8 Ms. Parfitt's objections be for all plaintiffs'</p> <p>9 counsel. So just memorializing that now that we're</p> <p>10 on the record.</p> <p>11 Q. We were on page 7 of your CV, and at the</p> <p>12 top of page 7 it asks for submitted grants. First</p> <p>13 of all, can you explain what you mean by "submitted</p> <p>14 grants"?</p> <p>15 A. Sure. So grants submitted are those that</p> <p>16 are being reviewed at the NIH, so these were</p> <p>17 submitted for NIH consideration. You see at the top</p> <p>18 "National Institute of Aging." So these have not</p> <p>19 been funded yet. They will be reviewed probably in</p> <p>20 April sometime. Then we'll know. So a department</p> <p>21 likes to know, you know "Are you working? Are you</p> <p>22 submitting new grants?"</p> <p>23 Q. Fair to say, these aren't things -- well,</p> <p>24 beyond submitting the funding proposal, these aren't</p> <p>25 things on which you're doing active research.</p>

<p style="text-align: right;">Page 22</p> <p>1 A. Yeah. No. No. The ones that are active 2 are listed right below that. 3 Q. We'll get to those. So is this submitted 4 grant related to talc at all? 5 A. No. 6 Q. Is it related to ovarian cancer at all? 7 A. No. 8 Q. Okay. As you mentioned, below the 9 submitted grant, there are three active grants, all 10 of which postdate your last deposition. Are any of 11 those related to talc -- 12 A. No. 13 Q. -- to ovarian cancer or cancer more 14 generally? 15 A. No. 16 Q. All right. And then on "completed grants 17 and contracts," going from page 7 and into page 8, I 18 believe there are three or four that postdate your 19 last deposition. I think three that started after 20 your last deposition, those would be the three that 21 are on page 7 or begin on page 7. Do you see that? 22 A. Yes. 23 Q. And do any of those grants have to do with 24 talc? 25 A. No.</p>	<p style="text-align: right;">Page 24</p> <p>1 journals for which you were an editor published 2 anything on talcum powder? 3 A. Yeah. Yeah. 4 Q. Okay. Do you know if the two -- if either 5 of the journals for which you're an editor have 6 published anything on asbestos since you joined? 7 A. No. I don't keep track of all the articles 8 in the journal. I'm on the editorial board. So I 9 get asked to review certain articles every year, at 10 least six. That's sort of the mandate, so. 11 Q. So just so I understand the process, your 12 job is essentially when someone submits an article 13 for publication, you're one of the peer reviewers 14 for the journal? 15 A. No. I'm the handling editor. So I get to 16 ask, you know, if it's, you know -- the editor-in- 17 chief looks at the editorial board and -- so I'm not 18 the editor-in-chief. I'm an editorial board member. 19 And they send it to me, say "Okay. You are the 20 handling editor." And you send it out for review, 21 comes back. And I may be asked to review, too, so 22 there's two sort of aspects of the job. 23 Q. That's helpful. Thank you. Assume you 24 haven't personally seen any articles -- 25 A. No.</p>
<p style="text-align: right;">Page 23</p> <p>1 Q. Okay. Cancer? 2 A. No. 3 Q. Okay. Let's turn to page 10. Since your 4 last deposition in 2016 (verbatim), it looks like 5 you've joined the editorial board of two journals: 6 Frontiers in Drug Safety and Frontiers in Primary 7 Care and Family Medicine. Is that correct? 8 A. That is correct. 9 Q. And you've left the editorial board of 10 Evidence-Based Medicine? 11 A. That is correct. 12 Q. Okay. Since you joined the editorial board 13 of Frontiers in Drug Safety, are you aware of 14 whether they've published any articles related to 15 talc? 16 A. I'm not aware of a specific journal, but 17 I'm aware that Frontiers had a publication on that. 18 I'm not sure if it's on drug safety, but the group 19 of journals has it. 20 Q. Can you explain that a little bit more? 21 Frontiers is a group of journals of which there are 22 several topical journals. Is that more or less 23 correct? 24 A. Yes. Yes. 25 Q. You're not aware of whether the two topical</p>	<p style="text-align: right;">Page 25</p> <p>1 Q. -- related to talc or asbestos. Okay. I 2 want to look at your publications since 2019. Do 3 you recall approximately how many things you've 4 published since 2019? 5 A. Not really. 6 Q. Okay. So I went through your CV. Let's 7 turn to page 26 first. Is it correct there have 8 been no books or monographs since 2019? 9 MS. PARFITT: Objection. Form. 10 Q. Have you published any books or monographs 11 since 2019? 12 A. No. 13 Q. Okay. Turning to page 28. First of all, 14 can you explain what the difference between a peer- 15 reviewed educational publication and a what we might 16 call traditional peer-reviewed publication is? 17 A. Yeah. So for us, you know, in the academic 18 world, we try to make a distinguish (verbatim) 19 between, you know, research articles that are based 20 on original data, so that, you'll see that in the 21 original research section. 22 Others are editorials. We'll try to place 23 into the editorial section. And then educational 24 articles are if -- say I'm the expert, you know, I 25 have an article on, say, COVID drugs and kidney</p>

<p style="text-align: right;">Page 26</p> <p>1 disease. Then, you know, it might be -- so there's 2 some distinction. It might be in the editorial 3 section. 4 It might be -- I think it's also -- 5 original research carries -- at least for academic 6 promotion, it carries more weight. It's not that 7 educational publications are not important, but they 8 are distinct. 9 Q. So as I'm sure you can predict, we're going 10 to talk a lot about meta-analyses and pooled 11 analyses later today. Those you consider original 12 research, even though they're not collecting the 13 data originally. 14 A. Yes. 15 Q. Okay. So back to your CV. Have you 16 published any educational publications since 2019? 17 A. I'd have to go back and look at it. Don't 18 recall. 19 Q. If I said there were none listed there, 20 would you believe me? 21 MS. PARFITT: Objection. Form. If you 22 need to look, Doctor. 23 A. That is correct. 24 Q. Okay. Next page, page 29, peer-reviewed 25 case reports. First of all, again, can you explain</p>	<p style="text-align: right;">Page 28</p> <p>1 look at some of my reports, some of them -- for 2 example, we describe the report of Wernicke -- 3 W-e-r-n-i-c-k-e -- encephalopathy. Yeah. Case 4 reports can be informative in the -- but, obviously, 5 if it's a common disease, then they're not as 6 informative as other study designs. 7 Q. Would you agree with me that, holding the 8 disease at issue constant, a case report is less 9 informative than other study designs? 10 MS. PARFITT: Objection. Form. 11 Misstates the testimony. 12 A. I want to understand the question. 13 Q. Sure. Holding the disease at -- you 14 mentioned rare diseases versus common diseases. If 15 it's the same disease, is a case report less 16 informative than another type of literature? 17 MS. PARFITT: Objection. Form. 18 A. Yeah. If you had a more comprehensive 19 study design. 20 Q. Let's look at correspondence on the next 21 page. Do you see any correspondence there since 22 2019? 23 A. No. 24 Q. Okay. Can we flip back to 16? So these 25 are peer-reviewed original research publications.</p>
<p style="text-align: right;">Page 27</p> <p>1 to me the difference between a case report and what 2 we might call a traditional peer-reviewed 3 publication? 4 A. Yeah. I mean, again, this is, you know -- 5 these distinctions are more in our realm. In 6 academic world, you want to make a distinction on 7 the different type of scientific output that is 8 coming out of, you know, lab or a person's record. 9 You know, in terms of distinction, case 10 report is usually just one report that talks about, 11 say, something that's really important or novel that 12 gets across a point. So that's why it's in a 13 distinct section. 14 Q. It usually deals with one case? 15 A. Yeah. Usually. Sometimes case reports are 16 combined with case reports and reviews of the 17 literature. So, you know, they could be in a 18 different section. 19 Q. Are the results from case reports generally 20 considered less reliable than the results from what 21 we might call multicase literature? 22 MS. PARFITT: Objection. Form. 23 A. You know, that goes to the question at 24 hand. Sometimes, you know, if the question is -- 25 outcome is rare, usually, sometimes -- if you can</p>	<p style="text-align: right;">Page 29</p> <p>1 And I count 33 since your last deposition. 2 A. Yeah. I don't remember the exact time, but 3 yes. 4 MS. PARFITT: Why don't you take a look 5 at your CV, Doctor. 6 A. I'm going with 33. December '19, so. 7 Q. Do any of the publications listed since 8 January of 2019 address talc? 9 A. No. 10 Q. Okay. What about asbestos? 11 A. No. 12 Q. What about ovarian cancer? 13 A. No. 14 Q. Have you conducted any studies outside of 15 litigation related to ovarian cancer since 2019 that 16 are not listed here as publications? 17 A. No. 18 Q. Okay. Do you have any forthcoming 19 publications related to ovarian cancer? 20 A. No. 21 Q. Okay. Are you working on any non- 22 litigation research related to ovarian cancer 23 currently? 24 A. No. 25 Q. Okay. Have you submitted the substance of</p>

<p style="text-align: right;">Page 30</p> <p>1 your opinions in this case for peer review?</p> <p>2 A. No.</p> <p>3 Q. Okay. Outside of the statements you've</p> <p>4 given in litigation, have you given any public</p> <p>5 statements concerning talc and ovarian cancer since</p> <p>6 2019?</p> <p>7 MS. PARFITT: Objection. Form.</p> <p>8 A. I've not spoken in the public, no.</p> <p>9 Q. Any statements about asbestos?</p> <p>10 A. No.</p> <p>11 Q. Okay. Let's look at page 13. These are</p> <p>12 presentations you've given?</p> <p>13 A. Yeah. This is a team. I mean, I have been</p> <p>14 on some. Others, I've presented. I'm not</p> <p>15 necessarily the first presenter.</p> <p>16 Q. Understood. Fair to say, based on your</p> <p>17 answer to the last question, that none of the</p> <p>18 presentations since 2019 relate to talc or ovarian</p> <p>19 cancer?</p> <p>20 A. No.</p> <p>21 Q. Okay. Any forthcoming presentations</p> <p>22 related to talc or ovarian cancer?</p> <p>23 A. No.</p> <p>24 MR. MARTIN: Okay. Let's move to</p> <p>25 Exhibit 4.</p>	<p style="text-align: right;">Page 32</p> <p>1 A. I don't.</p> <p>2 Q. Do you remember if it was more or less than</p> <p>3 \$30,000?</p> <p>4 MS. PARFITT: Objection. Form.</p> <p>5 A. I don't recall.</p> <p>6 Q. What about In re Tasigna Products Liability</p> <p>7 Litigation?</p> <p>8 A. Yeah. This was a recent litigation. That,</p> <p>9 I recall. And I provided expert report and</p> <p>10 deposition that was admitted under Daubert recently.</p> <p>11 I recall that. Yeah.</p> <p>12 Q. And what was the nature of your opinion in</p> <p>13 that case?</p> <p>14 A. Yeah. That Tasigna is causally related to</p> <p>15 the development of atherosclerosis and peripheral</p> <p>16 artery disease.</p> <p>17 Q. What does the drug Tasigna do?</p> <p>18 A. It is an anticancer drug.</p> <p>19 Q. Okay.</p> <p>20 A. CML for -- chronic myeloid leukemia.</p> <p>21 Q. Do you remember approximately how much you</p> <p>22 were paid in that case?</p> <p>23 MS. PARFITT: Objection. Form.</p> <p>24 A. I don't recall.</p> <p>25 Q. Okay.</p>
<p style="text-align: right;">Page 31</p> <p>1 (List of testimony, Exhibit 4, marked)</p> <p>2 Q. This is Exhibit B to your expert report.</p> <p>3 Is this exhibit a complete list of the testimony</p> <p>4 you've given in the last four years?</p> <p>5 A. That's as much as I can recall.</p> <p>6 Q. Okay. Do you think you would give</p> <p>7 testimony at a deposition and not remember the case?</p> <p>8 A. I mean, after you received my -- I mean,</p> <p>9 after I received this, I tried to list as much as I</p> <p>10 can recall. And I did go back and look at --</p> <p>11 Q. Okay.</p> <p>12 A. It's not like I'm trying to hide anything.</p> <p>13 Q. What was the nature of your opinions in</p> <p>14 Coates versus United States?</p> <p>15 A. I don't recall the specifics of the</p> <p>16 opinion. I'd have to -- I didn't review.</p> <p>17 Q. Do you recall the -- do you recall the</p> <p>18 general issue in the case?</p> <p>19 A. Let me just look at it.</p> <p>20 Q. Okay.</p> <p>21 A. I think it related to prostate cancer -- I</p> <p>22 don't remember. Again, I don't want to guess.</p> <p>23 Q. Okay. Do you remember how much you were</p> <p>24 paid for your testimony in that case?</p> <p>25 MS. PARFITT: Objection. Form.</p>	<p style="text-align: right;">Page 33</p> <p>1 A. But it was more than 30,000.</p> <p>2 Q. Okay. There you go.</p> <p>3 A. I can tell you.</p> <p>4 Q. Thank you. More than a hundred thousand?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 A. I don't recall.</p> <p>7 Q. Okay. Foutch versus Wilks and OU Medical</p> <p>8 Center?</p> <p>9 A. Yes. I recall. This was a recent</p> <p>10 testimony.</p> <p>11 Q. Okay. And do you recall how much you</p> <p>12 received for that?</p> <p>13 A. I don't recall that.</p> <p>14 Q. Again, more or less than \$30,000?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 A. I cannot tell you that.</p> <p>17 Q. Okay. Have you served as an expert but not</p> <p>18 testified in any cases in the last four years other</p> <p>19 than those three listed here?</p> <p>20 MS. PARFITT: Objection to the extent --</p> <p>21 he can answer a yes or no to that. But not any</p> <p>22 inquiry as to the lawyers or the litigation --</p> <p>23 A. Yes.</p> <p>24 MS. PARFITT: -- where he's not been</p> <p>25 declared an expert.</p>

<p style="text-align: right;">Page 34</p> <p>1 Q. You have?</p> <p>2 A. Yes.</p> <p>3 Q. Okay.</p> <p>4 A. I have. You know, I get inquiries about --</p> <p>5 Q. Have you submitted an expert report in any</p> <p>6 of those cases?</p> <p>7 A. I don't recall. I mean, this is my listing</p> <p>8 of deposition, as far as I can recall.</p> <p>9 Q. Right. But, I mean, you'd agree with me</p> <p>10 that there are cases in which you may submit an</p> <p>11 expert report. It may settle. You may never be</p> <p>12 deposed.</p> <p>13 A. I don't recall that. May have. Yeah.</p> <p>14 Q. Okay.</p> <p>15 MR. MARTIN: Can we mark this as Exhibit</p> <p>16 5?</p> <p>17 (Supplemental expert report of Sonal</p> <p>18 Singh, M.D., M.P.H, Exhibit 5, marked)</p> <p>19 Q. If you can keep this towards the front of</p> <p>20 your pile. We'll probably be referring back to this</p> <p>21 several times. And this is your expert report in</p> <p>22 this case -- your supplemental expert report in this</p> <p>23 case.</p> <p>24 So let's look at the first sentence. "I</p> <p>25 have been asked to supplement my previous expert</p>	<p style="text-align: right;">Page 36</p> <p>1 MS. PARFITT: Objection. Misstates his</p> <p>2 testimony.</p> <p>3 A. My opinion would be that talc causes</p> <p>4 epithelial ovarian cancer. And your interpretation</p> <p>5 could be that, since, you know, clear-cell is</p> <p>6 epithelial ovarian cancer, then it increases that.</p> <p>7 But my testimony is that talc causes epithelial.</p> <p>8 Q. So your testimony is not broken down by</p> <p>9 histological subtype of cancer.</p> <p>10 A. That is correct.</p> <p>11 Q. Okay. And, again, just to be clear, it's</p> <p>12 related to both invasive and borderline cancer.</p> <p>13 A. Yes. You know, all epithelial cancers.</p> <p>14 Q. Have you done any outreach to any public</p> <p>15 health organizations related to talc use and ovarian</p> <p>16 cancer?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 A. No, I have not.</p> <p>19 Q. Let's talk about the American College of</p> <p>20 Gynecology. Would you agree it's generally a</p> <p>21 reputable organization?</p> <p>22 MS. PARFITT: Objection. Form.</p> <p>23 A. That is correct.</p> <p>24 Q. Okay. Have you looked at any statements</p> <p>25 made by the American College of Gynecology since</p>
<p style="text-align: right;">Page 35</p> <p>1 report submitted on November 16, 2018 on whether the</p> <p>2 genital use of talcum powder products -- i.e.,</p> <p>3 Johnson's Baby Powder and Shower to Shower -- are</p> <p>4 causally related to an increased risk of ovarian</p> <p>5 cancer." Are you offering an opinion related to any</p> <p>6 non-ovarian types of cancer?</p> <p>7 A. No.</p> <p>8 Q. Okay. So not mesothelioma?</p> <p>9 A. No.</p> <p>10 Q. Not uterine cancer?</p> <p>11 A. No.</p> <p>12 Q. Okay. Are you offering an opinion related</p> <p>13 to all ovarian cancers?</p> <p>14 A. Epithelial.</p> <p>15 Q. Epithelial ovarian cancer. Okay. Thank</p> <p>16 you.</p> <p>17 Does the histological subtype of epithelial</p> <p>18 ovarian cancer matter?</p> <p>19 MS. PARFITT: Objection. Form.</p> <p>20 A. My work and opinions in this case are</p> <p>21 focused on epithelial ovarian cancer. To the extent</p> <p>22 that histologic types, you know, are included within</p> <p>23 that, it does matter.</p> <p>24 Q. So your opinion would be that talc causes,</p> <p>25 for instance, clear-cell cancer.</p>	<p style="text-align: right;">Page 37</p> <p>1 your last deposition?</p> <p>2 A. I don't recall.</p> <p>3 Q. Okay. Are you aware that they have updated</p> <p>4 their Website's "frequently asked questions" on</p> <p>5 ovarian cancer since your last deposition?</p> <p>6 MS. PARFITT: Objection. Just testified</p> <p>7 he had not looked at it.</p> <p>8 A. Yeah. I don't recall. I mean, if you show</p> <p>9 me, I can --</p> <p>10 Q. Okay. Well, we can do that.</p> <p>11 MR. MARTIN: This will be Exhibit 6.</p> <p>12 (ACOG printout, Exhibit 6, marked)</p> <p>13 Q. Can we turn to -- they're not paginated --</p> <p>14 but the second page of this document.</p> <p>15 A. Sure.</p> <p>16 Q. Actually, I apologize. Let's turn back to</p> <p>17 -- let's start with page -- let's start with the</p> <p>18 final page of substantive text.</p> <p>19 Do you see that it's -- it says last</p> <p>20 reviewed November 2021 and last updated May 2022?</p> <p>21 A. That is correct.</p> <p>22 Q. Okay. Now we can turn to the second page.</p> <p>23 Can you review the section "What are the risk</p> <p>24 factors for ovarian cancer?"</p> <p>25 A. Sure.</p>

<p style="text-align: right;">Page 38</p> <p>1 Q. I'll give you a minute.</p> <p>2 MS. PARFITT: Thank you.</p> <p>3 A. Yes.</p> <p>4 Q. Okay. Thank you. Agree with me that</p> <p>5 talcum powder use -- genital talcum powder use is</p> <p>6 not listed there?</p> <p>7 A. That is correct.</p> <p>8 Q. Do you disagree with ACOG's decision not to</p> <p>9 list genital talcum powder use as a risk factor for</p> <p>10 ovarian cancer?</p> <p>11 A. Yes.</p> <p>12 Q. You do. Okay. Have you told anyone at the</p> <p>13 organization that?</p> <p>14 A. No.</p> <p>15 Q. Okay.</p> <p>16 A. I don't -- I'm not an OB-GYN person.</p> <p>17 Q. Understood. Let's flip a few pages forward</p> <p>18 to "reducing risk." Do you see that section?</p> <p>19 A. Yes.</p> <p>20 Q. Okay. And can you just take a second to</p> <p>21 review that section?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. Thank you. Agree that there are</p> <p>24 some lifestyle recommendations there, such as using</p> <p>25 hormonal birth control pills?</p>	<p style="text-align: right;">Page 40</p> <p>1 A. I don't recall. But if I said that, you</p> <p>2 know, we can look at it, and --</p> <p>3 Q. We don't need to look at it. Do you</p> <p>4 currently counsel your female patients to avoid</p> <p>5 genital talcum powder use?</p> <p>6 A. I think, you know, if -- particularly as it</p> <p>7 relates to ovarian cancer, yes.</p> <p>8 Q. Yes. Do you do that only if they ask, or</p> <p>9 is that something you affirmatively say to them?</p> <p>10 MS. PARFITT: Objection. Form.</p> <p>11 A. I mean, you know, there's so much going on</p> <p>12 at a clinic visit that, you know, I'm not asking</p> <p>13 everyone about -- but when, you know, the decision</p> <p>14 goes about modifiable risk factors, I do ask.</p> <p>15 Q. Is it fair to say it's not one of your</p> <p>16 highest priorities in an ordinary patient visit?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 A. So it's, you know, you -- for example, I'll</p> <p>19 use example of lung cancer. You know, you see a</p> <p>20 patient or -- who is at risk. You're talking about</p> <p>21 smoking. It's modifiable. You know, the risks for</p> <p>22 family histories are higher. But then that's not</p> <p>23 modifiable. You start thinking about weight</p> <p>24 reduction, things that are modifiable.</p> <p>25 Q. Do you believe that the risk of ovarian</p>
<p style="text-align: right;">Page 39</p> <p>1 A. Yes.</p> <p>2 Q. Okay. But, again, agree there's no</p> <p>3 recommendation to stop using talcum powder?</p> <p>4 A. Yes. But there's no recommendation to lose</p> <p>5 weight as well. So it's not a full, comprehensive</p> <p>6 list of recommendations. Similarly, the risk</p> <p>7 factors don't capture all the risk factors, such as</p> <p>8 height (verbatim). And so, you know, there's other</p> <p>9 things -- smoking, we don't have it in the -- so</p> <p>10 it's not a comprehensive list. Obviously does not</p> <p>11 include talc but also does not include other things.</p> <p>12 Q. Do you think this section should be more</p> <p>13 comprehensive?</p> <p>14 A. Exactly.</p> <p>15 Q. Okay.</p> <p>16 MS. PARFITT: "This section" meaning the</p> <p>17 risk factors and --</p> <p>18 MR. MARTIN: I apologize.</p> <p>19 Q. Do you think this Website should be more</p> <p>20 comprehensive?</p> <p>21 A. I agree.</p> <p>22 Q. Okay. At your last deposition, I believe</p> <p>23 you said that you counsel your female patients to</p> <p>24 avoid genital talcum powder use. Do you recall that</p> <p>25 testimony?</p>	<p style="text-align: right;">Page 41</p> <p>1 cancer associated with talc use is comparable to the</p> <p>2 risk of lung cancer associated with smoking?</p> <p>3 MS. PARFITT: Objection.</p> <p>4 A. No. I was just using that as an example to</p> <p>5 explain how one discusses modifiable risk factors.</p> <p>6 Q. I understand. It wasn't meant to be a</p> <p>7 gotcha question. It was just a question.</p> <p>8 MR. MARTIN: Can we have this marked as</p> <p>9 well? Luis, this is not Tab 7. This is Tab 8, just</p> <p>10 if you're following along. This is the PDQ. I'm</p> <p>11 sorry, Luis. It's actually Tab 9.</p> <p>12 MR. CHU: Okay. Got it. Thanks.</p> <p>13 MR. MARTIN: But it's Exhibit 7 here at</p> <p>14 the deposition.</p> <p>15 (National Cancer Institute PDQ printout,</p> <p>16 Exhibit 7, marked)</p> <p>17 THE WITNESS: Can we take a break after</p> <p>18 this question?</p> <p>19 MR. MARTIN: Sure. If you'd like, we</p> <p>20 can take a break now.</p> <p>21 THE WITNESS: Yeah.</p> <p>22 MR. MARTIN: Let's go off the record.</p> <p>23 (A break was taken)</p> <p>24 MR. MARTIN: Back on the record.</p> <p>25 Q. Do you remember talking about the National</p>

<p style="text-align: right;">Page 42</p> <p>1 Cancer Institute PDQ at your previous deposition?</p> <p>2 A. I don't recall, but I have seen this</p> <p>3 document that you presented.</p> <p>4 Q. Okay. Let's look at -- let's actually look</p> <p>5 at your deposition, which I can mark as whatever the</p> <p>6 next exhibit is.</p> <p>7 (January 16, 2019 transcript of Sonal</p> <p>8 Singh, M.D., M.P.H, Exhibit 8, marked)</p> <p>9 Q. Can we look at the beginning of page 94 of</p> <p>10 your deposition, traditional page 94, which is page</p> <p>11 25 of the mini document?</p> <p>12 MS. PARFITT: He's talking about the</p> <p>13 actual page number.</p> <p>14 A. Yeah.</p> <p>15 Q. Begins "All right. This document." "This</p> <p>16 document that we're looking at from the National</p> <p>17 Cancer Institute, Exhibit 15, was updated in January</p> <p>18 of 2019." And your answer is "Yeah. But it doesn't</p> <p>19 mean the review is updated because it has no recent</p> <p>20 citations of studies that have been conducted."</p> <p>21 So fair to say that one of your criticisms</p> <p>22 of the PDQ at your last deposition was whether it</p> <p>23 was updated based on the most recent research?</p> <p>24 A. That is correct.</p> <p>25 Q. Okay. Let's go back to the PDQ -- the new</p>	<p style="text-align: right;">Page 44</p> <p>1 A. Yeah. 13, 14. So the question is "What is</p> <p>2 the methodology they've applied," you know, before</p> <p>3 concluding anything in looking at, you know, all the</p> <p>4 ratios, study designs. So yes, obviously, if it is</p> <p>5 comprehensive, then yes, you know, it is relevant.</p> <p>6 Q. So let's look at the talc section, which is</p> <p>7 a few pages back, not that many pages back. If we</p> <p>8 can look at the first short paragraph.</p> <p>9 You agree that PDQ still believes the data</p> <p>10 are inadequate to support an association between</p> <p>11 perineal talc exposure --</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 Q. -- and increased risk of ovarian cancer?</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 Misstates testimony.</p> <p>16 A. Right. That is what PDQ states. I don't</p> <p>17 agree with their statement there, but that's what</p> <p>18 the PDQ --</p> <p>19 Q. Understood. Okay. Can we look at the</p> <p>20 reference list?</p> <p>21 A. Sure.</p> <p>22 Q. Particularly 10 and 11 on the reference</p> <p>23 list. Can you read what 10 and 11 are for me?</p> <p>24 A. Yeah. The meta-analysis and the pooled</p> <p>25 analysis by O'Brien -- meta-analysis by Dr. Woolen</p>
<p style="text-align: right;">Page 43</p> <p>1 PDQ that I just circulated.</p> <p>2 A. ??</p> <p>3 Q. Yeah. There's a lot to keep track of.</p> <p>4 A. Okay.</p> <p>5 Q. Let's turn to the final page right at the</p> <p>6 bottom.</p> <p>7 MS. PARFITT: Zack, if you could kind of</p> <p>8 give us a category.</p> <p>9 Q. It's the last page of the document. It's</p> <p>10 not a category. It's, like, "Disclaimer," "Contact</p> <p>11 us," that stuff.</p> <p>12 MS. PARFITT: Perfect. Thank you.</p> <p>13 Q. Unfortunately, none of these Web pages are</p> <p>14 paginated, which makes it difficult. But you see</p> <p>15 "Updated October 16, 2023"?</p> <p>16 A. That is correct.</p> <p>17 Q. Okay. But I recall that one of your</p> <p>18 criticisms last time was that, even if it says it's</p> <p>19 been updated recently, it doesn't necessarily take</p> <p>20 into account all the scholarship. Was that correct?</p> <p>21 A. Yeah. And that is sort of the methodology</p> <p>22 applied, what are the studies they have evaluated.</p> <p>23 And so even here, we can see that they have 13</p> <p>24 references in the talc section.</p> <p>25 Q. 14, I believe. But yes, I see that.</p>	<p style="text-align: right;">Page 45</p> <p>1 and the pooled analysis by O'Brien.</p> <p>2 Q. Do you agree that those are two of the most</p> <p>3 up-to-date studies on the relationship between talc</p> <p>4 and ovarian cancer?</p> <p>5 A. They are some of the most up-to-date, not</p> <p>6 necessarily the most updated. I mean, you know,</p> <p>7 there's meta-analysis by Penninkilampi. There's</p> <p>8 meta-analysis by Health Canada. So, you know,</p> <p>9 there's a causality assessment.</p> <p>10 So there, you know -- there's all these</p> <p>11 OCAC consortium studies. There's OCWAA consortium</p> <p>12 studies. So there's many other studies that they</p> <p>13 could have looked at.</p> <p>14 Q. Understood. Do you know of a meta-analysis</p> <p>15 more recent than Woolen's meta-analysis?</p> <p>16 A. Yeah. But, you know, Woolen's meta-</p> <p>17 analysis is relevant. But it is relevant to the</p> <p>18 frequency. But, you know, the overall body of</p> <p>19 evidence -- case and control and cohort -- was Taher</p> <p>20 and Penninkilampi.</p> <p>21 Q. Understood. Can you try to answer the</p> <p>22 question I asked, though, which is are you aware of</p> <p>23 a meta-analysis that's more recent than the Woolen</p> <p>24 meta-analysis?</p> <p>25 MS. PARFITT: Objection. Asked and</p>

<p style="text-align: right;">Page 46</p> <p>1 answered.</p> <p>2 A. I don't follow the dates. I mean, whatever</p> <p>3 is in my report includes the relevant analysis from</p> <p>4 the date of previous report. There may be some --</p> <p>5 you know, whether you're referring to Lynch, which</p> <p>6 is more updated or -- I don't know the exact date</p> <p>7 when it was published. But it is in my report.</p> <p>8 Q. Okay. You'd agree that Lynch also</p> <p>9 concludes that talc does not cause ovarian cancer;</p> <p>10 is that correct?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 A. Yeah. Lynch concludes -- to be more</p> <p>13 precise, Lynch does not conduct a meta-analysis.</p> <p>14 They're only a systematic review. But yes, the</p> <p>15 inference is that it does not. And we can discuss</p> <p>16 why it concludes that and what are my concerns about</p> <p>17 it.</p> <p>18 Q. I think we might get to that this</p> <p>19 afternoon.</p> <p>20 A. Okay.</p> <p>21 Q. On O'Brien, are you aware of any pooled</p> <p>22 analysis of cohort studies more recent than O'Brien?</p> <p>23 MS. PARFITT: Objection. Form. Asked</p> <p>24 and answered.</p> <p>25 A. Yeah, there are. I mean, the OCAC</p>	<p style="text-align: right;">Page 48</p> <p>1 A. That is correct.</p> <p>2 Q. Okay. Do you think it's generally a</p> <p>3 reputable organization?</p> <p>4 A. It is a reputable organization, not</p> <p>5 "generally."</p> <p>6 Q. Okay. Are you aware that they put out a</p> <p>7 "Cancer Facts & Figures" document every year?</p> <p>8 A. Yes. I refer to it, you know, at times.</p> <p>9 Q. And what we have in front of us is the one</p> <p>10 from 2024. This document is long, but it's</p> <p>11 mercifully paginated this time. Can we turn to</p> <p>12 page 22?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. Can you review the two paragraphs</p> <p>15 there on page 22 under "Ovary"?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. Do you agree with what it says here,</p> <p>18 that the incidence rate has declined by somewhere</p> <p>19 between 1 and 3 percent a year over the last 30</p> <p>20 years or so?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. Do you agree that that can be</p> <p>23 attributed to increased oral contraceptive use and</p> <p>24 decreased postmenopausal hormone therapy?</p> <p>25 MS. PARFITT: Objection. Form.</p>
<p style="text-align: right;">Page 47</p> <p>1 consortium, the OCWAA consortium. Not of cohort</p> <p>2 studies but case control studies.</p> <p>3 Q. The answer with cohort studies is no?</p> <p>4 A. No.</p> <p>5 Q. Okay. So would it be fair to say that you</p> <p>6 don't believe that the references cited by the PDQ</p> <p>7 are comprehensive?</p> <p>8 A. That is correct.</p> <p>9 Q. Okay. Separate from whether they are</p> <p>10 comprehensive, do you believe they're up to date?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 A. I mean, if they're not comprehensive enough</p> <p>13 and they don't consider the whole body of evidence</p> <p>14 and don't do a causality assessment, as I have done,</p> <p>15 I don't know -- when they say "up to date," I really</p> <p>16 don't know, you know, did they consider everything</p> <p>17 and then decide to exclude Lynch or for some reason</p> <p>18 others? It's unclear why they excluded and included</p> <p>19 certain studies.</p> <p>20 MR. MARTIN: Okay. Next exhibit, Luis,</p> <p>21 this is Tab 11 in our binders. This is 9.</p> <p>22 (American Cancer Society printout,</p> <p>23 Exhibit 9, marked)</p> <p>24 Q. You're familiar with the American Cancer</p> <p>25 Society, I assume.</p>	<p style="text-align: right;">Page 49</p> <p>1 A. Those are one of the causes. There could</p> <p>2 be others. I mean, I think one of the others is,</p> <p>3 you know, better ascertainment. We are becoming</p> <p>4 much more aware of it, so.</p> <p>5 Q. Can I ask you why better ascertainment</p> <p>6 would influence -- would impact the case rate?</p> <p>7 A. Yeah. I mean, we are diagnosing it more,</p> <p>8 but the incident rate is declining.</p> <p>9 Q. Okay. Can we turn to page 23, which is the</p> <p>10 next page. And can you review the paragraph for</p> <p>11 "Risk factors"?</p> <p>12 A. Sure. Yes.</p> <p>13 Q. Okay. So the first sentence there, "The</p> <p>14 most important risk factor other than age is family</p> <p>15 history of breast or ovarian cancer." Agree with</p> <p>16 the implication that the most important risk factor</p> <p>17 of all is age?</p> <p>18 MS. PARFITT: Objection. Misstates</p> <p>19 testimony.</p> <p>20 A. I mean, I don't know if I would say -- the</p> <p>21 most important other than age, they're saying, is</p> <p>22 breast or family history of cancer.</p> <p>23 Q. Right. Would you agree that, by saying</p> <p>24 "other than age," that implies that age is the</p> <p>25 number 1 most important?</p>

<p style="text-align: right;">Page 50</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 A. Okay. Yeah.</p> <p>3 Q. Okay. And would you agree that the next</p> <p>4 most important is history of breast or -- family</p> <p>5 history of breast or ovarian cancer?</p> <p>6 MS. PARFITT: Objection. Misstates his</p> <p>7 testimony.</p> <p>8 A. Yes.</p> <p>9 Q. Okay. Also lists a number of protective</p> <p>10 and additional risk factors below there.</p> <p>11 A. That is correct.</p> <p>12 Q. Okay. And the last sentence, "The weight</p> <p>13 of the evidence does not support an association</p> <p>14 between ovarian cancer and genital exposure to talc-</p> <p>15 based powder." Assume you disagree with the</p> <p>16 American Cancer Society about this.</p> <p>17 A. Yes. Again, you know, partly because I</p> <p>18 don't see any references in how they came to that</p> <p>19 weight-of-evidence conclusion. Did they do a</p> <p>20 causality assessment? What are the studies that</p> <p>21 they evaluated to come to that conclusion?</p> <p>22 Q. Have you ever told anyone at the American</p> <p>23 Cancer Society you disagree with them?</p> <p>24 MS. PARFITT: Objection. Form.</p> <p>25 A. Many times with CDC, with the American --</p>	<p style="text-align: right;">Page 52</p> <p>1 Q. Have you read the order that excluded your</p> <p>2 opinion?</p> <p>3 A. I haven't read the full order, but I did</p> <p>4 read the portions of it relevant to my -- yeah.</p> <p>5 Q. Makes sense.</p> <p>6 MR. MARTIN: Could I have this -- which,</p> <p>7 Luis, is Tab 13 in our binders -- marked as</p> <p>8 Exhibit 10?</p> <p>9 (Order from Court in Viagra case,</p> <p>10 Exhibit 10, marked)</p> <p>11 Q. Let's turn to federal supplement page 796,</p> <p>12 97, which is WestLaw page 14.</p> <p>13 A. Yes.</p> <p>14 Q. Last sentence of the first paragraph in the</p> <p>15 second column, "As Li 2014 was one of the smallest</p> <p>16 studies and its results have not been duplicated,</p> <p>17 Dr. Singh has not provided a persuasive reason to</p> <p>18 rely more heavily on it."</p> <p>19 A. Where?</p> <p>20 Q. Last sentence of the first paragraph on the</p> <p>21 second column. So agree that the Court excluded</p> <p>22 your opinion, in part, for placing undue emphasis on</p> <p>23 a smaller study?</p> <p>24 A. That is correct.</p> <p>25 MS. PARFITT: Objection. Form.</p>
<p style="text-align: right;">Page 51</p> <p>1 lot of people disagreed with the CDC in COVID. So</p> <p>2 yeah.</p> <p>3 Q. I understand you disagree. I'm asking if</p> <p>4 you've ever told anyone at the American Cancer</p> <p>5 Society that.</p> <p>6 MS. PARFITT: Objection.</p> <p>7 A. About this particular --</p> <p>8 Q. About this particular issue.</p> <p>9 A. No.</p> <p>10 Q. Okay. You can put that aside. Do you</p> <p>11 recall giving an expert opinion in In re Viagra?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. Did you testify in that case?</p> <p>14 A. That is correct.</p> <p>15 Q. Okay. I assume it wasn't in the last four</p> <p>16 years, though. That's why it wasn't on the list we</p> <p>17 went over earlier today?</p> <p>18 A. That's correct. I think it was in my</p> <p>19 previous list.</p> <p>20 Q. Okay. Understood.</p> <p>21 A. If I recall, I mean, it was in my previous.</p> <p>22 Q. Understood. Are you aware that, in 2020</p> <p>23 after your most recent deposition, your opinion was</p> <p>24 excluded in that case?</p> <p>25 A. I am aware.</p>	<p style="text-align: right;">Page 53</p> <p>1 Q. Okay. Do you believe you've done that in</p> <p>2 this case?</p> <p>3 A. No. I mean, there's -- the evidence has</p> <p>4 been, you know -- that was one study. I mean, here</p> <p>5 we've had, what, four decades of -- not four. I</p> <p>6 don't know the exact time -- but several decades and</p> <p>7 several case control studies and, you know, overall</p> <p>8 body of evidence that provides for a causal opinion.</p> <p>9 And I've not emphasized one study as opposed to</p> <p>10 other, suggesting that, well, Li is, you know --</p> <p>11 I've looked at the cumulative body of evidence.</p> <p>12 Q. You do weight some studies more heavily</p> <p>13 than others?</p> <p>14 A. Yeah. Strengths and limitations. Exactly.</p> <p>15 Q. Can we go back to the end of the previous</p> <p>16 column?</p> <p>17 A. Which is on --</p> <p>18 Q. It's the same page, previous column here,</p> <p>19 "At the hearing Dr. Singh."</p> <p>20 A. Yeah.</p> <p>21 Q. "At the hearing, Dr. Singh candidly</p> <p>22 admitted that the Bradford Hill criteria are</p> <p>23 susceptible to an outcome-driven analysis, though he</p> <p>24 contends he did not take such an approach here." Do</p> <p>25 you still agree that the Bradford Hill criteria are</p>

<p style="text-align: right;">Page 54</p> <p>1 susceptible to an outcome-driven analysis?</p> <p>2 MS. PARFITT: Objection. Form.</p> <p>3 A. That is correct.</p> <p>4 Q. Still agree that you're not taking that</p> <p>5 approach here?</p> <p>6 A. No.</p> <p>7 Q. Okay. Next sentence, "Dr. Singh testified</p> <p>8 that the criteria are not ranked in any order of</p> <p>9 importance, which is contrary to the position he has</p> <p>10 taken in prior litigation and contrary to how it</p> <p>11 appears they are usually applied."</p> <p>12 Do you believe there's any particular order</p> <p>13 of importance associated with the Bradford Hill</p> <p>14 criteria?</p> <p>15 A. So, I mean, this sort of comes out of</p> <p>16 Dr. Bradford Hill's paper, which, prior to getting</p> <p>17 into the viewpoints, not even criteria -- so I,</p> <p>18 again, have -- it says "ranked in order of</p> <p>19 importance." So that's sort of his -- so when we</p> <p>20 use his viewpoints, you know, that's what his</p> <p>21 assessment was and -- yeah.</p> <p>22 Q. So sorry. Just to make a clear record. Do</p> <p>23 you agree -- I think there's two questions here.</p> <p>24 Do you agree, first, that Dr. Hill was --</p> <p>25 ranked those viewpoints in order of importance?</p>	<p style="text-align: right;">Page 56</p> <p>1 relationship -- the particular association that</p> <p>2 you're looking at?</p> <p>3 A. Exactly.</p> <p>4 Q. Okay. How do you make that decision when</p> <p>5 you're looking at an association?</p> <p>6 A. So you'd have to still rank them. But, you</p> <p>7 know, you're finally making a causal determination.</p> <p>8 And whoever is, they'd have to either make a</p> <p>9 rational argument that biologic, say -- I'm just</p> <p>10 using example of biologic plausibility -- is the --</p> <p>11 is, you know, driving the causal assessment.</p> <p>12 Q. Is that decision a subjective process,</p> <p>13 objective process, or partially subjective and</p> <p>14 partially objective?</p> <p>15 MS. PARFITT: Just objection. Form.</p> <p>16 A. No. Yeah --</p> <p>17 Q. Can I redo the question?</p> <p>18 A. I can answer that. Yeah.</p> <p>19 Q. Is that a subjective or objective process?</p> <p>20 A. So it, you know -- there is no quantitative</p> <p>21 way to weigh the Bradford Hill viewpoints. He never</p> <p>22 stated it that way, that you give 10 points to</p> <p>23 strength, 2 points to consistency, and 1 point to</p> <p>24 biologic plausibility.</p> <p>25 It is not a subjective. I would say it is</p>
<p style="text-align: right;">Page 55</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 A. I mean, the -- his article talks about</p> <p>3 these viewpoints in order of importance.</p> <p>4 Q. Okay. Do you, Dr. Singh, believe that they</p> <p>5 can be ranked in order of importance?</p> <p>6 A. They can.</p> <p>7 Q. Okay. Which would you find to be the most</p> <p>8 important?</p> <p>9 A. I mean, just go by, you know, strength of</p> <p>10 association. I have to look at the list.</p> <p>11 Q. Understood. Do you believe that the same</p> <p>12 -- whether you want to call them viewpoints or</p> <p>13 criteria, are most important in every case? Or do</p> <p>14 you believe that -- you know what? Let's ignore</p> <p>15 that question.</p> <p>16 A. So I can clarify, since you asked that.</p> <p>17 Q. Yeah.</p> <p>18 A. So while he listed the viewpoints, ranked</p> <p>19 them in order of importance, each criteria</p> <p>20 necessarily will not be important in each case, you</p> <p>21 know, taking it out of talc or -- you know, could be</p> <p>22 X associated with Y. In some cases, consistently</p> <p>23 and biologic plausibility may be enough to</p> <p>24 contribute to causation.</p> <p>25 Q. So it depends on the particular</p>	<p style="text-align: right;">Page 57</p> <p>1 a scientific opinion based on, most of the time,</p> <p>2 there is quantitative data either to support or</p> <p>3 refute that opinion. In certain cases, there is no</p> <p>4 evidence.</p> <p>5 MR. MARTIN: Can we have this marked as</p> <p>6 the next exhibit? This is, Luis, Tab 15 in our</p> <p>7 binders. It's Exhibit 11.</p> <p>8 (February 2, 2023 transcript of Sonal</p> <p>9 Singh, M.D., M.P.H, Exhibit 11, marked)</p> <p>10 Q. This is the deposition in the Tassigna case</p> <p>11 we talked about.</p> <p>12 A. This is the recent deposition or --</p> <p>13 Q. Let me look at the date on it.</p> <p>14 MR. TISI: Just a question. Is this</p> <p>15 covered by any kind of confidentiality order? I'm</p> <p>16 not sure we would have access to it. Do you know --</p> <p>17 THE WITNESS: No. This was admitted</p> <p>18 under Daubert.</p> <p>19 MR. MARTIN: No. I understand the</p> <p>20 question.</p> <p>21 MR. TISI: If it's covered by a</p> <p>22 confidentiality order, we didn't --</p> <p>23 THE WITNESS: I don't have access to it</p> <p>24 either.</p> <p>25 MR. MARTIN: I understand. I don't -- I</p>

<p style="text-align: right;">Page 58</p> <p>1 don't believe so. But can we go off the record for 2 a second and confirm that? 3 (A break was taken) 4 MR. MARTIN: Back on the record. So to 5 follow up on the issue that was raised before, my 6 understanding now is that we received these from a 7 public records source. So I'm comfortable using 8 them. So I'll redistribute these, which, again, are 9 the depositions you gave in the Tassigna -- I'm sure 10 I'm pronouncing that wrong -- MDL. 11 THE WITNESS: That's correct. 12 MR. TISI: Again, for clarification, 13 these have redactions in it. I'm assuming -- 14 MR. MARTIN: Those aren't redactions. 15 Those are highlights. 16 MR. TISI: Okay. I got you. Okay. I 17 didn't get a chance to look through it. Sorry. 18 MR. MARTIN: No problem. It does look 19 exactly like sometimes things are redacted. 20 MR. TISI: Are those highlights your 21 office did? 22 MR. MARTIN: Yes. 23 MR. TISI: So these were not in the 24 filing -- 25 MR. MARTIN: Correct. I was just trying</p>	<p style="text-align: right;">Page 60</p> <p>1 whether you still believe that they're all 2 important, you have to apply them qualitatively? 3 MS. PARFITT: Actually, that misstates 4 his testimony. 5 A. Yeah. And you have to look at the report. 6 I mean, all of them were applied, and all of them 7 are important. But, obviously, in certain contexts, 8 some of them may be more relevant than others. 9 So I don't see any -- you have to look at 10 the report. I mean, you can't look at this document 11 in isolation. We should bring that -- you know, if 12 you pull that off, you could have -- I'm sure you 13 have the report. 14 Q. I do. 15 A. Let's look at the report and see. 16 Q. No. Again, it's not intended to be a 17 gotcha question. I'm trying to understand the scope 18 of your opinion. 19 A. Yeah. You have to look at all of that. 20 And then, you know, you have to decide, you know, 21 which in certain cases -- for example, dose 22 response. It may not apply. If a drug is given at 23 one dose, how will that apply? I mean, you look at 24 it, but it may not be relevant. 25 Q. If a drug is given in multiple doses, do</p>
<p style="text-align: right;">Page 59</p> <p>1 to bring attention to myself and to Dr. Singh. 2 MR. TISI: I just want to understand 3 what the highlighting's for. 4 THE WITNESS: Just so you know, I have 5 not reviewed this. 6 MR. MARTIN: Understood. I'm just going 7 to touch on it very briefly. 8 THE WITNESS: Sure. 9 Q. So if you can turn to deposition page 283, 10 which is page 72 of the document. So if you can 11 review where the highlighting begins down to the end 12 of the page. 13 MS. PARFITT: That would be Line 11 down 14 to 25? 15 MR. MARTIN: Correct. 16 MS. PARFITT: Continuing onto the top 17 of. 18 MR. MARTIN: You do not need to continue 19 onto the top of the page. 20 A. "Which of the"? Is that the question? 21 Q. Yes. The question and the answer to that. 22 A. The answers is "Temporality is important, 23 strength of association, consistency, plausible" -- 24 now you're listing all of them. Yeah. 25 Q. So my question with this document is</p>	<p style="text-align: right;">Page 61</p> <p>1 you believe dose response is an -- 2 A. Yes. 3 Q. -- important criteria? 4 A. Yes. 5 Q. Can we look back at your report in this 6 case? 7 MS. PARFITT: Just for the record, it's 8 Exhibit No. 5. 9 A. 5. 10 Q. Okay. Does the November 2013 (verbatim) 11 report contain all of the opinions that you plan to 12 give in this case that are not included in your 13 previous 2019 report? 14 A. 2023, to correct. It was not 2013. 15 Q. Thank you for fixing that. 16 A. No. I think, you know, these are linked 17 reports. I mean, it's not that I'm -- I think I'm 18 providing testimony on the update between the 19th 19 and 23rd in this report. Maybe you can restate the 20 question. I'll try to answer it. 21 Q. Understood. 22 MR. TISI: You said "the 19th." 23 MS. PARFITT: Let's redo dates here. 24 MR. MARTIN: Yes. 25 Q. Do the 2018 report and 2023 report together</p>

<p style="text-align: right;">Page 62</p> <p>1 define the full scope of the opinions you plan to 2 offer?</p> <p>3 A. That is correct.</p> <p>4 Q. Okay.</p> <p>5 A. Sorry about dates.</p> <p>6 Q. No. Understood. Can we turn to page 4 of 7 the 2023 report. So you say in page 4 that you use 8 the weight-of-the-evidence approach in examining the 9 causal relationship. Can you define for me what you 10 mean by weight-of-the-evidence approach?</p> <p>11 A. The weight of evidence is, you know, 12 gathering all the relevant body of evidence to the 13 specific scenario and the cumulative body of 14 scientific and medical evidence for a systematic 15 review based on animal studies, in vitro studies, 16 human studies -- including epidemiologic studies -- 17 and then -- including published, most of the time, 18 you know, peer-reviewed documents, other documents 19 which -- then examining them for whether they are 20 relevant and reliable to the present -- the context 21 and then examining them through the lens of the 22 Bradford Hill viewpoints.</p> <p>23 And, obviously, these are -- there is no 24 quantitative way to say that strength of evidence 25 gets 7 points and, you know, biologic plausibility</p>	<p style="text-align: right;">Page 64</p> <p>1 MS. PARFITT: Zack, I'm not sure exactly 2 where you're going. I've giving you a little 3 runway. I think, you know, from 2018, we talked 4 quite a bit about how to make a causal inference 5 using Bradford Hill criteria.</p> <p>6 MR. MARTIN: Understood.</p> <p>7 MS. PARFITT: So, again, giving you some 8 pretext but --</p> <p>9 MR. MARTIN: Understood. Understood.</p> <p>10 Yeah. I don't want to rehash things we've already 11 done.</p> <p>12 MS. PARFITT: Right. I'm looking at his 13 prior deposition, so.</p> <p>14 Q. Do you believe the methodology you used in 15 this 2023 report is the same as the methodology that 16 Health Canada used in their report?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 A. In general, yes. I mean, I'm not -- you 19 know, I didn't do exactly the same thing. I 20 actually relied on Health Canada so I didn't have to 21 redo what they had to do. So in a lot -- in the 22 majority of, you know, bodies of evidence that they 23 appraised, you know, they appraised, you know, the 24 O'Brien study. They appraised a lot of the 25 mechanistic studies. So I relied on them.</p>
<p style="text-align: right;">Page 63</p> <p>1 gets 1 and dose response gets 2.</p> <p>2 Q. To the extent you draw causal conclusions 3 in your professional work, is this the same 4 methodology that you use in your professional work?</p> <p>5 A. So my professional work is clinical; right? 6 So I see patients. So we use the differential 7 diagnosis as -- we don't necessarily -- we don't 8 have to make causal determinations when I see 9 patients.</p> <p>10 Q. Understood. But I guess I was referring to 11 your published academic work. To the extent you 12 draw causal conclusions in your publications, is it 13 the same methodology that you use?</p> <p>14 A. Yeah. I mean, if you are going to draw 15 causal conclusion, you would use -- I mean, Health 16 Canada has used the same approach. They've used a 17 weight-of-evidence approach. So they may have 18 defined it differently, but they have used a weight- 19 of-evidence approach.</p> <p>20 There are other approaches. I mean, you 21 know, it's not, like, the only approach. I'm being 22 transparent about what I've gathered, what I've 23 used, and how I rate it. I've rated certain 24 viewpoints more than others. And that's, you know, 25 that's my approach.</p>	<p style="text-align: right;">Page 65</p> <p>1 But their -- in terms of assessment, yes. 2 I, you know -- to my best knowledge, I was, you 3 know, applying the weight-of-evidence approach.</p> <p>4 Q. You mentioned that you conducted a Bradford 5 Hill analysis in your 2023 report. You also 6 conducted one in your 2018 report. And your opinion 7 in 2018 was that the evidence was sufficient to 8 reach a causal conclusion. Why did you feel the 9 need to conduct an additional Bradford Hill analysis 10 in 2023?</p> <p>11 MS. PARFITT: Objection. Form.</p> <p>12 A. So evidence was sufficient to reach a 13 causal conclusion at that time. But when I was 14 asked to update my report, I -- this is not 15 something of my own choosing. I was asked to do it.</p> <p>16 And so I could not just look at the body of 17 evidence and, you know, at the end of -- say "Well, 18 you know, I agree with what I said then." So I had 19 to look at it through the lens of what is known in 20 the previous time, what is here. So I would have to 21 do the Bradford Hill analysis.</p> <p>22 Q. So is it fair to say that your opinion is 23 that, given the intervening new science, you felt it 24 important to do a new Bradford Hill analysis?</p> <p>25 MS. PARFITT: Objection. Misstates his</p>

<p style="text-align: right;">Page 66</p> <p>1 testimony.</p> <p>2 A. No. I think that whatever I evaluated from</p> <p>3 2019 -- let's get the dates right -- until, you</p> <p>4 know -- 2018 was my report -- then 2023, this new</p> <p>5 search, I felt that, since I was going to provide a</p> <p>6 causal opinion, updated causal opinion, while at</p> <p>7 that time, you know, the opinion, you know, body of</p> <p>8 evidence was sufficient -- if you're looking at a</p> <p>9 body of evidence and, again, arriving at a causal</p> <p>10 opinion -- then, you know, I had to be transparent</p> <p>11 in my assessment. I could not, for example, end at</p> <p>12 page 2 -- 17 and just give you a one-line</p> <p>13 conclusion.</p> <p>14 Q. Can we look at page --</p> <p>15 A. This is my report; right?</p> <p>16 Q. Yes, it is.</p> <p>17 A. Which page is it?</p> <p>18 Q. Well, I guess I'll ask a general question.</p> <p>19 You can look through your report.</p> <p>20 Do you agree that, in your 2023 report, you</p> <p>21 assigned less weight to the factor of dose response</p> <p>22 or biological gradient than some of the other</p> <p>23 factors?</p> <p>24 A. Let me just look at the wording that I</p> <p>25 used.</p>	<p style="text-align: right;">Page 68</p> <p>1 Q. All right. Thank you. Are you offering</p> <p>2 the opinion that cosmetic talcum powder contains</p> <p>3 asbestos?</p> <p>4 A. So my causality opinion's not predicated on</p> <p>5 presence of asbestos in talc. But as was noted in</p> <p>6 my previous report and in my present report, I'm</p> <p>7 aware of studies that provide evidence that talc may</p> <p>8 contain asbestos.</p> <p>9 Q. Which studies are you relying on for that?</p> <p>10 MS. PARFITT: I guess I'll give a bit of</p> <p>11 leeway. Again, this area was examined at his prior</p> <p>12 deposition, 2019.</p> <p>13 THE WITNESS: Let me answer.</p> <p>14 MS. PARFITT: I'm giving you context --</p> <p>15 I'm giving you a little leeway. Go ahead,</p> <p>16 Dr. Singh.</p> <p>17 THE WITNESS: I have to find it now.</p> <p>18 MS. PARFITT: Take your time.</p> <p>19 Q. It's on page 13, I think.</p> <p>20 A. Let's see. I just want to be precise by my</p> <p>21 language. Yeah. So the studies I'm relying on are</p> <p>22 the FDA testing, testing by -- that was cited in the</p> <p>23 previous report, I think, Johnson & Johnson testing,</p> <p>24 and then obviously the testing by Dr. Longo and</p> <p>25 Rigler and now, subsequent to this, the EPA</p>
<p style="text-align: right;">Page 67</p> <p>1 Q. Yes. It's on page 21.</p> <p>2 A. Yes.</p> <p>3 Q. Okay. And can you point to any literature</p> <p>4 suggesting that it's appropriate to weight the dose</p> <p>5 response factor less than the other factors?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 A. So it is not that -- it is -- I'm trying to</p> <p>8 be transparent on -- for example, there's no</p> <p>9 literature to suggest that experiments should be --</p> <p>10 you're not going to get experimental data on this</p> <p>11 question.</p> <p>12 So, of course, I weighed -- it's my</p> <p>13 weighting of the factors. Does not mean that those</p> <p>14 dose response is not -- I evaluated dose response.</p> <p>15 There were some -- you know, several studies which</p> <p>16 provided dose response; some studies did not.</p> <p>17 So I weighed -- so my -- I think I have to</p> <p>18 be clear that my assessment -- the factors driving</p> <p>19 my assessment are consistency and strength of</p> <p>20 evidence, temporality, plausibility, and coherence.</p> <p>21 So dose response is also there but to a</p> <p>22 lesser -- so it's my assessment of the viewpoints.</p> <p>23 It's not necessarily, you know -- you're right.</p> <p>24 There's not literature suggesting that dose response</p> <p>25 should not be used in assessment.</p>	<p style="text-align: right;">Page 69</p> <p>1 conclusions about the presence of asbestos in talc.</p> <p>2 Again, I'm not a mineralogist, but several</p> <p>3 lines of evidence -- in fact, even epidemiologists</p> <p>4 have at least acknowledged and are starting to</p> <p>5 interpret the evidence that -- for example, O'Brien</p> <p>6 in a recent paper on fibroids said that, you know,</p> <p>7 talc may be contaminated with asbestos.</p> <p>8 Q. Let's break that down --</p> <p>9 A. Sure.</p> <p>10 Q. -- one by one. You mentioned an EPA study</p> <p>11 that you said was subsequent to -- do you mean</p> <p>12 subsequent to your report or subsequent to your</p> <p>13 previous deposition?</p> <p>14 A. No. Subsequent to my report. Like, this</p> <p>15 EPA -- not study. It's an EPA ruling.</p> <p>16 MR. MARTIN: Was that in the materials</p> <p>17 that you gave us Monday?</p> <p>18 MS. PARFITT: Yes, it was.</p> <p>19 THE WITNESS: That's the EPA ruling. I</p> <p>20 mean, it just came out -- what -- a couple of weeks</p> <p>21 ago?</p> <p>22 MS. PARFITT: Yes.</p> <p>23 THE WITNESS: But we have to bring it</p> <p>24 out. I don't remember.</p> <p>25 MR. TISI: If you want a copy, I can get</p>

<p style="text-align: right;">Page 70</p> <p>1 a copy.</p> <p>2 MR. MARTIN: If you have one handy, I'll</p> <p>3 take a quick look at it and review it over the</p> <p>4 break.</p> <p>5 MR. TISI: Sure.</p> <p>6 THE WITNESS: Yeah. This was not</p> <p>7 included in my citations.</p> <p>8 MS. PARFITT: For the record, it was, in</p> <p>9 fact, provided in the Dropbox, just for the record.</p> <p>10 And we will give you a copy.</p> <p>11 MR. TISI: I'd appreciate if you are</p> <p>12 able to give it back because it's my only copy.</p> <p>13 MR. MARTIN: No problem. I can probably</p> <p>14 get it from the Dropbox.</p> <p>15 MR. TISI: Can I just check something,</p> <p>16 make sure I don't have writing on it?</p> <p>17 Q. Let's talk about the FDA. Are you</p> <p>18 referring to the 2019 FDA findings that prompted a</p> <p>19 recall?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. Do you know how many samples the FDA</p> <p>22 tested in 2019?</p> <p>23 A. I don't remember, off the top of my head.</p> <p>24 But it was something bot -- so there's a distinction</p> <p>25 between samples and bottles.</p>	<p style="text-align: right;">Page 72</p> <p>1 A. And I will not be testifying to testing of</p> <p>2 talc and presence.</p> <p>3 Q. Understood.</p> <p>4 A. And quantity of -- sorry -- quantity of</p> <p>5 asbestos and --</p> <p>6 Q. Understood. Have you personally reviewed</p> <p>7 the testing done by Drs. Longo and Rigler?</p> <p>8 A. Yes. I reviewed the report.</p> <p>9 Q. You reviewed the report?</p> <p>10 A. Yeah. I -- you know, I reviewed the</p> <p>11 methods. And to the extent I can understand it, I</p> <p>12 understood it. But I'm not expert in that area.</p> <p>13 Q. Have you reviewed any testing -- asbestos</p> <p>14 testing performed by defense experts?</p> <p>15 A. Yeah. I've seen their -- I don't know if</p> <p>16 it's exhibits. I don't know if I've seen their</p> <p>17 testing.</p> <p>18 Q. Have you seen their reports?</p> <p>19 MS. PARFITT: Again, if you could be a</p> <p>20 little more --</p> <p>21 Q. Have you seen the report of any defense</p> <p>22 expert who performed asbestos testing?</p> <p>23 A. No, I have not.</p> <p>24 Q. Okay. Do you believe that you're qualified</p> <p>25 to weigh -- let's strike that question. Start over.</p>
<p style="text-align: right;">Page 71</p> <p>1 Q. Understood.</p> <p>2 A. You're asking about samples or bottles?</p> <p>3 Q. I will ask about samples first.</p> <p>4 A. Yeah. I don't recall exactly. But it was</p> <p>5 something about -- it's approximate -- I don't like</p> <p>6 approximations. It was 52 or -- yeah. I don't want</p> <p>7 to approximate.</p> <p>8 Q. Okay. Understood. If the answer is "no,"</p> <p>9 that can be the answer.</p> <p>10 A. Yeah. Yeah. I don't --</p> <p>11 Q. Do you know what percentage of those</p> <p>12 samples tested positive?</p> <p>13 A. No. I can't recall.</p> <p>14 Q. Okay. And do you know how many samples of</p> <p>15 J&J baby powder have been tested by the FDA in</p> <p>16 history?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 A. No, I don't. I don't. I know that there</p> <p>19 have been many.</p> <p>20 Q. You don't know how many of those tested</p> <p>21 positive in history?</p> <p>22 A. No.</p> <p>23 MS. PARFITT: Objection. Asked and</p> <p>24 answered.</p> <p>25 Q. Okay.</p>	<p style="text-align: right;">Page 73</p> <p>1 Do you know what X-ray diffraction is?</p> <p>2 A. No, I don't.</p> <p>3 Q. Okay.</p> <p>4 A. I think we should stop at that line of</p> <p>5 questioning. I mean, you can ask. You can ask.</p> <p>6 Q. I just like to get a record. Polarized</p> <p>7 light microscopy?</p> <p>8 A. I mean, I know the name. I can tell you</p> <p>9 what TEM was. But how is that performed? No, I</p> <p>10 don't.</p> <p>11 Q. That was -- the question is do you feel</p> <p>12 like you're qualified to weigh the strengths and</p> <p>13 weaknesses of those forms of asbestos testing?</p> <p>14 A. No.</p> <p>15 Q. Okay.</p> <p>16 A. I know TEM is better. I mean, I read.</p> <p>17 Q. What do you read that says TEM is better?</p> <p>18 A. The FDA's, you know, moving towards TEM.</p> <p>19 Again, I don't want to get into that area of</p> <p>20 testing. Yeah.</p> <p>21 Q. Well, I think it's important, if you're</p> <p>22 going to offer an opinion about whether talc takes</p> <p>23 -- contains asbestos, that we understand what that</p> <p>24 opinion is based on.</p> <p>25 A. Yeah. I mean, the opinion is based on, you</p>

<p style="text-align: right;">Page 74</p> <p>1 know, these citations, the EPA report and their, you 2 know -- they would be the experts to answer whether, 3 you know, the methodology was appropriate. I mean, 4 I -- on my reading, it appears to be appropriate. 5 Q. When you say "they," are you referring to 6 Drs. Longo and Rigler? 7 A. Yes. 8 MS. PARFITT: He mentioned IARC. He 9 mentioned EPA. 10 Q. Let me ask it as an open-ended question. 11 When you said "they" in that question, what were you 12 referring to? 13 A. Yeah. When -- obviously, the evidence I 14 cite is from the FDA. I mean, so you can go to the 15 FDA. You can go to Longo and Rigler. You can go 16 to, you know, the EPA and look at their methodology 17 and provide -- yeah. 18 Q. Let's turn to page 14 of your report. 19 A. Sure. 20 Q. The final paragraph before Section 8, so 21 final paragraph of Section 7, beginning with 22 "Vimercati, et al." 23 A. Yeah. 24 Q. You say that Vimercati is a case series 25 with four cases: Two with talc exposure, and one</p>	<p style="text-align: right;">Page 76</p> <p>1 Q. Okay. At your last deposition, you said 2 that you would not be offering an opinion on the 3 quantity of asbestos exposure necessary to cause 4 ovarian cancer. Is that still the case? 5 A. That is correct. 6 Q. Okay. You mention here "retrograde 7 migration of talc." Are you going to be offering an 8 opinion that talc can reach the ovaries through 9 inhalation? 10 A. I mean, I -- some have suggested that. 11 Like, for example, Schildkraut suggests that in her 12 paper, the AACES study. I am, you know -- that's 13 one biologic plausibility opinion that I, you know, 14 included in my 2018 report -- 2018? Yeah. 15 MS. PARFITT: 2018. 16 A. That's one plausible mechanism. 17 Q. Do you have an opinion related to fibrous 18 talc? 19 A. I mean, I have an opinion related to 20 whatever's in the bot -- you know, I was examining 21 the association. I was not disaggregating talc, 22 talc containing asbestos, fibrous talc. You know, 23 what's in that bottle, whatever's -- the studies 24 reported, I'm not going to be able to disaggregate 25 those components of talc.</p>
<p style="text-align: right;">Page 75</p> <p>1 with an identified amphibole fiber of tremolite. Is 2 it your standard practice to draw causal conclusions 3 from a single case report? 4 MS. PARFITT: Objection. Asked and 5 answered. 6 A. No. I'm not drawing any causal conclusion 7 from that single -- I mean, again, the causality 8 assessment is based on the whole body of evidence. 9 You know, I did a supplement. I found studies. So 10 I noted it. So, you know, that one study or case 11 series is not going to drive the causal assessment. 12 Q. So the answer to the question is no; but, 13 also, you didn't do that here. 14 MS. PARFITT: Objection. Misstates his 15 testimony. 16 A. What do you mean by -- ask the question. 17 Ask the question. Of course, I have to cite. If 18 the studies are there, you have to cite the study. 19 But the causality assessment is not based on this. 20 It is not even predicated on the presence of 21 asbestos, you know. 22 Q. Understood. At your last deposition, you 23 said you were not familiar with the term "cleavage 24 fragments." Is that still the case? 25 A. Yes.</p>	<p style="text-align: right;">Page 77</p> <p>1 Q. Who drafted your 2023 supplemental expert 2 report? 3 A. Me, me, and only me. 4 Q. You wrote every word in it? 5 A. Every single word in it. 6 Q. Okay. Did you have any discussions with 7 lawyers before you drafted it? 8 MS. PARFITT: Objection to any 9 discussions with counsel as to the content. 10 Q. Okay. Can you answer that as a yes-or-no 11 question without telling me the content of those 12 discussions, if they exist? 13 MS. PARFITT: Just so I understand, 14 Mr. Martin -- I'm not being difficult -- but have we 15 talked to him since his 2018 report when we asked -- 16 advised him that the Court required an updated 17 report? Help me out here. Of course we've talked 18 to him. 19 Q. Okay. 20 A. Yeah, I did have a discussion. Yeah. 21 Q. Okay. 22 MS. PARFITT: We talked to him about 23 coming to this deposition. 24 MR. MARTIN: I'm sorry. I meant in 25 advance of drafting the 2023 report.</p>

<p style="text-align: right;">Page 78</p> <p>1 A. Yeah. They had to -- because if I hadn't 2 known it, I wouldn't have drafted it. There would 3 have to be a discussion. 4 Q. Do you remember approximately how many 5 discussions you had? 6 A. It was -- that should have been noted in my 7 thing because -- 8 Q. Fair point. If you had a discussion, it 9 would be noted on the invoice? 10 A. I noted discussion separately and my review 11 separately, I think. 12 Q. Let me just check and make sure that's 13 right. 14 A. I hope I did. 15 Q. Sounds right but -- telephonic 16 consultation? 17 A. Yes. So that's the discussion. 18 Q. Understood. Did you personally identify 19 all of the documents included in your -- all of the 20 documents on the reference list of your 2023 report? 21 A. The majority. They did provide some 22 additional documents, for example, you know, the 23 depositions and, you know, Longo's testing so -- and 24 the EPA testing. I mean, I had heard about the EPA 25 test, and I had it. But I didn't have the full text</p>	<p style="text-align: right;">Page 80</p> <p>1 Q. Understood. So can we turn to Appendix A? 2 A. Which is? 3 MS. PARFITT: We're referencing the '23 4 report? 5 Q. Right. Appendix A of the 2023 report, 6 which follows the reference list. 7 A. Okay. Yes. 8 Q. Were any studies -- let me back up. 9 There are no rows for which I see multiple 10 Xs under -- let me back up further. 11 The chart includes two columns under 12 "include" and several columns under "exclude." The 13 "exclude" columns would be reasons for which you 14 excluded literature that you identified in your 15 search; right? 16 A. Sure. 17 Q. Okay. And if you listed an article and 18 there was an X under an "exclude" category, that was 19 the reason you excluded it? 20 A. Yeah. So just to be clear -- and I think I 21 explained that -- article could be -- have been 22 excluded for multiple reasons. But that Appendix A 23 just denotes one reason. 24 For example, article could have been a 25 duplicate and not have original data as well. But,</p>
<p style="text-align: right;">Page 79</p> <p>1 of it. 2 Q. When you received materials from counsel, 3 did you ask for those? Or were they provided to you 4 without asking? 5 A. Some of them, like, I asked them to source 6 the references because, you know, I didn't have it 7 in my library. So I may have asked one or two 8 references for them to source it. Like, I had 9 identified it, but in some cases they did provide 10 it. 11 Q. Let's look back at your report, page 3. In 12 that box there, that contains the search terms that 13 you used to identify new articles for your 14 deposition? 15 A. Yes. 16 Q. Okay. And all the articles that were 17 responsive to those search terms are included in 18 Appendix A to your report; is that right? 19 A. Yeah. And the ones that I excluded are -- 20 there's two lists; right? There's an included and 21 relevant list. And there is a potentially, you 22 know, excluded is -- the, you know -- the -- some of 23 them may have been cited for context. But the ones 24 in the references are the main articles that are 25 relevant to this report.</p>	<p style="text-align: right;">Page 81</p> <p>1 you know, that is as transparent as I could be in 2 terms of that. 3 Q. You anticipated my next question. So thank 4 you. What was your basis for excluding an article 5 as nonrelevant? 6 A. Well, so I state that in the report. So we 7 should look at that. So, I mean, in the section on 8 "eligibility criteria," I included epidemiologic 9 studies -- 10 MS. PARFITT: That's page 3. 11 Q. Yes. 12 A. -- which provided data, so they had to 13 provide data on association. I included study 14 designs. I included, you know, the cohort studies, 15 case control studies, umbrella reviews, systematic 16 reviews, meta-analysis, pooled analysis. 17 I examined the references to find 18 additional articles which provided data. I also 19 included studies that reported on biological 20 mechanisms and causal pathways that either supported 21 or refuted the role of talc. And this could include 22 different study design. 23 When I say, after consideration, I excluded 24 narrative reviews or opinion articles that did not 25 provide original articles -- original data that are</p>

<p style="text-align: right;">Page 82</p> <p>1 not deemed relevant, some of them were cited for 2 context, so -- but in terms of the -- you know, my 3 opinion, I am focusing on, you know, systematic 4 review that have studies that provide data. 5 Q. How do you define "cited for context"? 6 What exactly do you mean by that? 7 A. Well, they are cited. You know, they are 8 cited in the report. Yeah. 9 Q. But you seem to be drawing a distinction 10 between "cited for context" and "cited 11 substantively"? 12 A. Yeah. 13 Q. Can you explain what you mean by the 14 distinction? 15 A. Sure. For example -- and I have to, you 16 know -- I don't want to make sort of assumptions 17 about anything. But, for example, let's see -- I 18 don't -- I can't come up with -- but, you know, it 19 will be, like, response to an article which 20 explains, you know, the underlying -- yeah. So, for 21 example, if you look at -- let's see if I can 22 explain this better. For example -- I can't find 23 that. 24 Q. We can -- 25 MS. PARFITT: Just give him a moment.</p>	<p style="text-align: right;">Page 84</p> <p>1 and ovarian cancer." 2 A. Sure. Sure. 3 Q. You have this marked as not relevant 4 because it is not a systematic review or 5 meta-analysis; is that correct? 6 A. That is correct. And does not provide 7 original data. Yeah. 8 Q. Okay. Let me ask you about original data. 9 So -- okay. Yes. So it would be relevant if it 10 provided original data, on the one hand, or if it 11 was a systematic review or meta-analysis on the 12 other hand. 13 A. Yes. Exactly. So, for example, I mean, in 14 terms of context, you know, if you look at 62 -- I'm 15 trying to answer -- your question is -- where is 16 that Rosner -- 77, Row 77. It's also excluded. It 17 does not have original data. But that is, like, a 18 citation for context. I'm trying to explain why, 19 you know, because, you know, it was excluded. 20 Q. So going back to 29, Goodman 2020, it's 21 entitled "A systematic review." Can you explain to 22 me the difference between a systematic review and a 23 -- I'm sorry. It's entitled "A critical review." 24 Can you explain to me the difference between a 25 critical review and systematic review?</p>
<p style="text-align: right;">Page 83</p> <p>1 He doesn't mind. 2 A. Yeah. I mean, there are -- I'm trying to 3 look through the list of excluded articles. 4 Q. I'll withdraw the question. 5 A. No. No. 6 Q. I don't want to spend time on this. I 7 don't want to spend time on this. I'll withdraw the 8 question. 9 MR. MARTIN: Can we take a break? Off 10 the record. 11 (A break was taken) 12 MR. MARTIN: Back on the record. 13 Q. We were looking at Appendix A to your 2023 14 report when we broke. And can we look at Row 29 of 15 this? 16 MS. PARFITT: Row 29 of Appendix A? 17 MR. MARTIN: Yes. Which should be 18 Goodman, et al. 19 THE WITNESS: Yeah. 20 MS. PARFITT: For the record, if you 21 don't mind, since there's two Goodmans. Goodman 22 '23? 23 MR. MARTIN: No. Goodman 2020. 24 MS. PARFITT: 2020. Thank you. 25 Q. It's entitled "A critical review of talc</p>	<p style="text-align: right;">Page 85</p> <p>1 A. Sure. You know, a systematic review would 2 provide search dates, would provide what are the 3 studies they included -- you know, similar to what I 4 have here -- would provide criteria for inclusion, 5 exclusion and, in many cases, assessment of bias 6 and, if the data are appropriate, do a pooled 7 analysis or -- meta-analysis. Sorry. 8 Q. Let's look at Row 27. This is one that you 9 did include as relevant; right? This is Gabriel, et 10 al., "Douching, talc use, and risk for ovarian 11 cancer and conditions related to genital tract 12 inflammation," 2019. 13 A. Which is -- 14 MS. PARFITT: 27, Gabriel. 15 MR. MARTIN: Let's introduce this as an 16 exhibit. 17 Q. Sorry. So let's just look at your report, 18 again, page 12. 19 A. Okay. 20 Q. So this is the same document, just going 21 back to the body of it. You described this as a 22 case control study in the body of your report, so 23 not a systematic review or meta-analysis; right? 24 A. That's what I state here. 25 Q. Okay. But it's included because it</p>

<p style="text-align: right;">Page 86</p> <p>1 contains original data?</p> <p>2 A. Yeah.</p> <p>3 Q. Just wanted to --</p> <p>4 A. Sure.</p> <p>5 Q. -- put a finer point.</p> <p>6 A. I have to look at -- I want to make sure I</p> <p>7 have it in front of me if you're going to ask</p> <p>8 specific questions.</p> <p>9 Q. Understood. We will probably return to it</p> <p>10 later today, but that was the only question I had at</p> <p>11 this point. Let's go back to Appendix A, Row 92.</p> <p>12 Sorry. There's a lot of flipping through paper</p> <p>13 today.</p> <p>14 A. That's okay, as long as I have it in front</p> <p>15 of me.</p> <p>16 (2021 article by Nicolas Wentzensen, et</p> <p>17 al., Exhibit 12, marked)</p> <p>18 Q. This is Wentzensen, O'Brien, "Talc, body</p> <p>19 powder, and ovarian cancer: A summary of the</p> <p>20 epidemiological evidence" from 2021 --</p> <p>21 A. Yes.</p> <p>22 Q. -- published in Gynecologic Oncology.</p> <p>23 A. That is correct.</p> <p>24 Q. Do you think Gynecologic Oncology is a</p> <p>25 reputable journal?</p>	<p style="text-align: right;">Page 88</p> <p>1 depending on bias --</p> <p>2 Q. Let's talk about financial bias</p> <p>3 specifically. Are you aware of any financial bias</p> <p>4 they have?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 A. No.</p> <p>7 Q. Okay.</p> <p>8 MR. MARTIN: Let's mark this as an</p> <p>9 exhibit. This is the Wentzensen, O'Brien article I</p> <p>10 just mentioned. I have a wrongly paginated version</p> <p>11 of this, unfortunately.</p> <p>12 THE WITNESS: I read it. So you can</p> <p>13 point --</p> <p>14 MR. MARTIN: I understand. I need to</p> <p>15 find my place in it because I have it paginated</p> <p>16 differently in my outline than it is here.</p> <p>17 MS. PARFITT: Sure.</p> <p>18 Q. If you can look at page 8 of the document,</p> <p>19 halfway through the second paragraph of the</p> <p>20 conclusion.</p> <p>21 A. Give me a second.</p> <p>22 MS. PARFITT: Page 8.</p> <p>23 Q. Specifically the sentence that starts</p> <p>24 "Taken together, the epidemiological data from case</p> <p>25 control studies and cohort studies" --</p>
<p style="text-align: right;">Page 87</p> <p>1 A. Yes.</p> <p>2 Q. Have you cited things from it?</p> <p>3 A. Yes.</p> <p>4 Q. I think you cited some things from it in</p> <p>5 your expert report.</p> <p>6 A. Yes.</p> <p>7 Q. Do you know by -- the reputation of either</p> <p>8 Dr. Wentzensen or Dr. O'Brien?</p> <p>9 A. No. But I've read a lot of the articles.</p> <p>10 Q. Do you have any reason to believe that</p> <p>11 they'd be biased one way or another?</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 A. I mean, biased in the terms of, you know,</p> <p>14 what kind of bias? You know, bias works in</p> <p>15 different forms. Financially? No. They work at,</p> <p>16 as far as where, you know, NCI.</p> <p>17 But there are other sources of bias, like</p> <p>18 confirmation bias. You know, researchers publish</p> <p>19 findings. And then there are subsequent study --</p> <p>20 they pattern these findings.</p> <p>21 So, you know, I'm not saying that's what</p> <p>22 they have. But there are different kinds of biases</p> <p>23 operational in the literature. And I'm not saying</p> <p>24 something totally out of the ordinary. That's well</p> <p>25 established in the scientific literature. Yes. So</p>	<p style="text-align: right;">Page 89</p> <p>1 A. I'm sorry. I'm not there.</p> <p>2 Q. Let me know when you get there.</p> <p>3 A. Page 8 where? Second paragraph?</p> <p>4 Q. Second paragraph of the "conclusion"</p> <p>5 section.</p> <p>6 A. Second paragraph. "Taken together." Okay.</p> <p>7 Got it.</p> <p>8 Q. "Taken together, the epidemiological data</p> <p>9 from case control studies and cohort studies suggest</p> <p>10 that there may be a small positive association</p> <p>11 between genital powder use and ovarian cancer, which</p> <p>12 may be limited to women with patent reproductive</p> <p>13 tracts."</p> <p>14 Do you agree with Wentzensen that there's a</p> <p>15 small association between genital powder use and</p> <p>16 ovarian cancer?</p> <p>17 MS. PARFITT: Objection. Form.</p> <p>18 A. I mean, I'm not going to qualify it. But,</p> <p>19 you know, they provided and other studies have</p> <p>20 provided evidence that, based on the biological</p> <p>21 mechanisms, there is a positive association between</p> <p>22 genital powder use and ovarian cancer in women with</p> <p>23 patent tracts.</p> <p>24 Q. You mentioned in that answer "biological</p> <p>25 mechanism." Is biological mechanism relevant to</p>

<p style="text-align: right;">Page 90</p> <p>1 consideration of an association, or is it relevant</p> <p>2 to consideration of causation?</p> <p>3 A. I mean, yeah, causation.</p> <p>4 Q. Okay. Do you agree with the statement that</p> <p>5 it may be limited to women with patent reproductive</p> <p>6 tracts?</p> <p>7 A. I mean, that is one possible biological</p> <p>8 mechanism. But, you know, if -- and, again, we went</p> <p>9 through this before. But if the other -- there are</p> <p>10 other biological mechanisms such as inhalation,</p> <p>11 then, you know, it may not be limited.</p> <p>12 Q. I guess I'm not asking at this point for a</p> <p>13 discussion of biological mechanism. Do you believe</p> <p>14 that the associations shown in the literature are</p> <p>15 limited to women with patent reproductive tracts?</p> <p>16 MS. PARFITT: Objection. Form.</p> <p>17 A. Not necessarily. I mean, her study broke</p> <p>18 it down, and some of the more recent studies have.</p> <p>19 And that is probably the most likely biological</p> <p>20 mechanism. But other studies have shown in, you</p> <p>21 know -- the earlier studies did not adjust for</p> <p>22 patent tracts. And they still showed -- so if we</p> <p>23 would rely on those studies, then yes.</p> <p>24 Q. Presumably, those studies would include</p> <p>25 women both who have had tubal ligation or</p>	<p style="text-align: right;">Page 92</p> <p>1 statement that I'm being asked to comment on.</p> <p>2 Q. Let's just move on. I don't need to dig</p> <p>3 through your report for it.</p> <p>4 Next paragraph of this "conclusion"</p> <p>5 section, the second sentence which -- the third</p> <p>6 sentence, actually, "However, the experimental and</p> <p>7 animal carcinogenicity data for talc are limited and</p> <p>8 inconclusive. There are currently no good animal or</p> <p>9 experimental models of ovarian carcinogenesis that</p> <p>10 could be used to more directly test biological</p> <p>11 effects of talc."</p> <p>12 A. Where are you?</p> <p>13 Q. I apologize. It's two sentences down.</p> <p>14 A. Got it. Yeah.</p> <p>15 Q. You see where it is --</p> <p>16 A. Yes.</p> <p>17 Q. Okay. The question I have is whether you</p> <p>18 agree that there are currently no good animal or</p> <p>19 experimental models of ovarian carcinogenesis.</p> <p>20 MS. PARFITT: Objection. Form.</p> <p>21 Misstates his testimony.</p> <p>22 MR. MARTIN: The question is whether he</p> <p>23 agrees.</p> <p>24 A. So I think, you know, assessment of</p> <p>25 causality is, you know -- she -- she's making a</p>
<p style="text-align: right;">Page 91</p> <p>1 hysterectomy and those who have not.</p> <p>2 A. Exactly.</p> <p>3 Q. And you just used a pronoun in the last</p> <p>4 answer. You said "she." I assume you mean</p> <p>5 Dr. O'Brien, one of the co-authors in this paper.</p> <p>6 A. I think she's a "she."</p> <p>7 Q. Her name is Katie. I'm going to make that</p> <p>8 guess.</p> <p>9 A. I also made a guess. I have not met her.</p> <p>10 Q. In the same paragraph, the sentence that</p> <p>11 follows, "Data from a large case control study</p> <p>12 suggested that associations between talc use and</p> <p>13 ovarian cancer were largely confined to</p> <p>14 premenopausal women and postmenopausal women who</p> <p>15 used hormone therapy." And the citation is 39,</p> <p>16 which is Cramer 2016.</p> <p>17 I believe you may have said this in your</p> <p>18 report. But do you agree with Cramer and Wentzensen</p> <p>19 that the association is limited to premenopausal</p> <p>20 women and postmenopausal women with hormone therapy?</p> <p>21 MS. PARFITT: Objection. Form.</p> <p>22 A. You have to point me where I wrote that.</p> <p>23 But, I mean, I see that study and I -- you know,</p> <p>24 this was -- this study was cited in my previous</p> <p>25 report. But I want to make sure that -- what is the</p>	<p style="text-align: right;">Page 93</p> <p>1 statement. Does not make a -- you have to examine</p> <p>2 animal models. You have to examine experimental</p> <p>3 models, but it is really about biologic</p> <p>4 plausibility.</p> <p>5 And she, actually, in a recent paper on</p> <p>6 fibroids provides the best example of an</p> <p>7 experimental model where she talks about migration,</p> <p>8 inflammation and epithelial cells. And we can</p> <p>9 initiate a series of mutagenic events that can lead</p> <p>10 to cancer as well as -- and if -- which is even</p> <p>11 worse with asbestos.</p> <p>12 So in my mind, that's an experimental</p> <p>13 model. I'm not sure what experimental model -- that</p> <p>14 term means. Is it some -- you know, I don't know if</p> <p>15 she is thinking about every step in the carcinogenic</p> <p>16 process. I don't really know what the term means.</p> <p>17 Q. Let's focus on -- do you agree that there</p> <p>18 are no good animal models of ovarian carcinogenesis?</p> <p>19 MS. PARFITT: Object. Objection.</p> <p>20 Misstates the prior testimony.</p> <p>21 A. Yeah. I'm not aware of good animal models.</p> <p>22 Q. Halfway down the same paragraph -- and I'll</p> <p>23 slow down this time to make sure everyone is</p> <p>24 there --</p> <p>25 MS. PARFITT: Thank you.</p>

<p style="text-align: right;">Page 94</p> <p>1 Q. -- it's the sentence starting "Other 2 components."</p> <p>3 A. Yes. I have it.</p> <p>4 Q. Okay. "Other components of body powder, 5 including cornstarch, could also possibly play a 6 role in carcinogenesis by inducing inflammation in 7 the reproductive tract. But carcinogenicity data 8 are lacking." Do you have an opinion about the 9 carcinogenicity of non-talc components of body 10 powder?</p> <p>11 A. I have not evaluated that.</p> <p>12 Q. And body powder that is not -- cornstarch 13 body powder you have not evaluated.</p> <p>14 A. I've used "genital talc," yeah.</p> <p>15 Q. So there's a different product that is 16 cornstarch body powder. You haven't evaluated that?</p> <p>17 A. No. I mean, some of the studies talk about 18 it. But I haven't eval -- my opinion is limited to 19 genital talcum powder use.</p> <p>20 Q. The next sentence -- the next two 21 sentences, "Confounding by indication may explain 22 some of the observed associations. This would occur 23 if women with hormonal or inflammatory exposures or 24 conditions that are associated with ovarian cancer 25 were also more likely to use body powder in the</p>	<p style="text-align: right;">Page 96</p> <p>1 provides benefit. It is less operational when 2 you're thinking about harmful effects.</p> <p>3 So I don't think confounding by indication 4 is a consideration. There could be a consideration 5 about confounding, per se, but not necessarily 6 confounding by indication; or if it is, it's very 7 low.</p> <p>8 Q. Do you think it's possible that obese women 9 are more likely to use talcum powder than nonobese 10 women?</p> <p>11 MS. PARFITT: Objection to form.</p> <p>12 A. You would have to have data showing that, 13 you know, it is -- you know, that -- you know, 14 obesity is a risk factor for -- you know, we know 15 that. But the question then would be is -- are 16 women that are obese -- you'd have to fulfill the 17 criteria for confounding.</p> <p>18 You have to have obesity association with 19 cancer -- we know it is, several studies -- obesity 20 association with exposure, in this case, and then 21 obesity not mediating the pathway. You'd have to go 22 to specifics. But that is not confounding by 23 indication. That's not an indication for ovarian 24 cancer. That's confounding, yes, but -- and you 25 have several studies have adjusted for that.</p>
<p style="text-align: right;">Page 95</p> <p>1 genital area."</p> <p>2 The first question is whether you agree 3 that confounding by association is a possibility to 4 be considered.</p> <p>5 MS. PARFITT: Objection.</p> <p>6 Q. Excuse me. That confounding by indication 7 is a possibility to be considered.</p> <p>8 A. Yeah. And, you know, A, you have to 9 consider it in epidemiologic studies of association, 10 any kind of confounding. And you have to consider 11 confounding by indication.</p> <p>12 I'm not sure this would be operational 13 because we are talking about exposure outcome 14 relationship that takes years. We're not talking 15 about you use it, you know, today and you have 16 cancer tomorrow.</p> <p>17 So, you know, if women had irritation in 18 something and they had the first symptoms of -- so 19 it's really about -- "confounding by indication" is 20 a very specific term. And it means that you are 21 using it for indication for that disease.</p> <p>22 And, in fact, there's good studies to 23 suggest that, you know, it is more operational when 24 you're thinking about drugs and efficacy, you know, 25 like, ACE inhibitors and stroke and something that</p>	<p style="text-align: right;">Page 97</p> <p>1 But I disagree with her about confounding 2 by -- I think she's using the term very generally 3 but not specifically. She could have been more 4 specific about confounding.</p> <p>5 Q. Okay. Can you -- and I appreciate the 6 context. But can you just try to give a yes-or-no 7 answer to the question of whether you believe it's 8 possible -- not established but possible -- that 9 obese women are more likely to use talcum powder?</p> <p>10 MS. PARFITT: Objection. Asked and 11 answered.</p> <p>12 A. I don't -- I have to look at the data and 13 say.</p> <p>14 MS. PARFITT: You've answered the 15 question.</p> <p>16 Q. Can you review the first paragraph on the 17 next page -- just let me know when you've reviewed 18 it -- beginning "Independent of the underlying 19 cause"?</p> <p>20 A. Yeah. Yes. First paragraph. Okay.</p> <p>21 Q. Yeah. Second sentence, "The low relative 22 risk translates to a very low absolute risk 23 increase, given the rarity of ovarian cancer" and 24 then later down the page, "Given the widespread use 25 of powders and the rarity of ovarian cancer, the</p>

<p style="text-align: right;">Page 98</p> <p>1 case for public health relevance is limited." Do 2 you agree or disagree with the statement that the 3 case for public health relevance is limited? 4 A. I disagree because that's, you know -- the 5 reason I disagree is, you know, it's not just about 6 relative risk. And it's not just about the 7 prevalence of exposure. And as you know, we've seen 8 studies, many studies, where they talk about give or 9 take there are 20,000 incident ovarian cancers in 10 the US and -- annually and the PAR. 11 So at least at the population level, you 12 are getting -- Davis and Wu provide an estimate. 13 And I don't recall the specifics, but we can look at 14 that. So that means there is a preventable cause of 15 risk factors. Why would that -- why wouldn't it be 16 relevant for public health? 17 MR. MARTIN: Can we go off the record 18 for just a moment while I go through my notes? 19 (A break was taken) 20 MR. MARTIN: Back on the record. 21 Q. Can you turn to page 4 of the Wentzensen 22 article we were discussing before the break? The 23 First sentence of 4.1, "Ovarian cancer is 24 characterized by profound heterogeneity that can be 25 observed in site of origin, genetic susceptibility,</p>	<p style="text-align: right;">Page 100</p> <p>1 Q. Okay. Does the fact that talc is 2 associated with various subtypes of cancer affect 3 your analysis of the specificity criterion of the 4 Bradford Hill analysis? 5 MS. PARFITT: Objection. Form. 6 A. Can you restate? Sorry. 7 Q. Sure. One of the viewpoints that Dr. Hill 8 talks about is specificity; right? 9 A. Yeah. 10 Q. Okay. And we just talked about the fact 11 that epithelial ovarian cancer contains several 12 subtypes. 13 A. Sure. 14 Q. Does the fact that it contains several 15 subtypes -- let me start that one over. 16 Did you consider the fact that it contains 17 several subtypes when you were evaluating the 18 specificity viewpoint? 19 A. I don't think that that is, you know, the 20 relevance of -- if you -- and we should pull the 21 Bradford Hill article. I don't know what the 22 reference -- can we pull it out? 23 The reason I'm saying that is I don't think 24 that is the consideration there. It's more the 25 consideration of "Is that etiology the only cause of</p>
<p style="text-align: right;">Page 99</p> <p>1 somatic mutations, molecular pathways, risk factor 2 associations, and morphologic differences." Do you 3 agree with that statement? 4 A. Yes. 5 Q. Do you agree that that statement is true 6 for epithelial ovarian cancer specifically? 7 A. I mean, that's what I think she's talking 8 about; right? She's talking about -- 9 Q. But we talked earlier about your opinion 10 that talc causes all epithelial ovarian cancers. 11 A. Yeah. Because that's what I evaluated. 12 Q. And did you consider this heterogeneous 13 nature of ovarian cancer as part of your opinion? 14 A. My -- you know, so my overall opinion was 15 based on whatever the studies reported on and -- 16 which included these various cancers. When notable, 17 I did note -- for example, if you go back to my 18 previous report, I did note what specific cancers 19 they were reporting on. But I did not disaggregate 20 that particular -- that talc only is associated with 21 X and Y. 22 Q. Would you agree with me that the 23 overwhelming majority of epithelial ovarian cancers 24 are serous? 25 A. Yes. By, you know -- just by prevalence.</p>	<p style="text-align: right;">Page 101</p> <p>1 that cancer or whatever outcome?" So it's that -- 2 just because it's etiologic heterogeneity I don't 3 think -- and in any way, you know, I did not weigh 4 specificity very heavily, because, in fact, I don't 5 -- I can look at the exact words -- because ovarian 6 cancer has multicausal, you know, risk factors so -- 7 but it's not because of the fact that it is 8 etiologic, you know, heterogeneity. It's just that 9 there are different causes. 10 Q. Okay. Can you explain to me the difference 11 between different causes and etiologic 12 heterogeneity? 13 A. Yeah. I mean, different causes are, like, 14 you know -- like, say if you say -- I don't know -- 15 "What are the established risk factors?" You know, 16 we could go back and look at a list and say, you 17 know, "Obesity increases the risk of causes of 18 ovarian cancer." Those are causes. 19 For a moment let's, you know, think that 20 obesity -- but that does not get into etiologic 21 heterogeneity. Here, we are talking about different 22 types of cancer. That's etiologic heterogeneity. 23 Q. Okay. So this Wentzensen and O'Brien 24 article, you exclude it because it's not a meta- 25 analysis or original data; right?</p>

<p style="text-align: right;">Page 102</p> <p>1 A. Yeah. I mean, you know, it is important. 2 It's, you know, included in my list of -- I reviewed 3 it. But it did not provide original data. I mean, 4 most of the opinions are, you know, derived from the 5 previous publication that are included and 6 considered, you know. So it's not excluded in that 7 sense. But it is in my list of reviewed documents. 8 Q. Are you aware of a different article by 9 O'Brien, Wentzensen along with Ogunsin and Sandler 10 entitled "Douching and genital talc use: Patterns 11 of use and reliability of self-reported exposure"? 12 A. Yes. 13 Q. Okay. I did not see that on your reliance 14 list. Did you review it in drafting your expert 15 report? 16 A. I know I'm aware of it. I don't know when 17 I reviewed it. But yeah, I did review it. Yeah. 18 Q. Okay. Is there a reason it wouldn't be on 19 your reliance list? 20 A. You know, it could -- I'll have to look at 21 it and see why not but -- what was the year of 22 publication? 23 Q. 2023. 24 A. Okay. When in '23? 25 MR. TISI: I think it was December 2023,</p>	<p style="text-align: right;">Page 104</p> <p>1 (2023 article by Katie M. O'Brien, et 2 al., Exhibit 13, marked) 3 Q. Can you look at the O'Brien 2023 article 4 that was marked as Exhibit 13? 5 A. Sure. 6 Q. In particular, can you look at the end of 7 the second body paragraph, the last sentence of that 8 paragraph, "However, if historic use cannot be 9 accurately recalled, measurement error can bias 10 effect estimates, especially if recall reliability 11 differs by outcome status." 12 A. Which page? I'm sorry. I missed it. 13 Q. It's the first page, page 376, of the 14 journal pagination. But it's the first page of the 15 article. 16 A. Where are we? 17 Q. It's the second paragraph of the body. 18 A. Okay. 19 Q. It's the final sentence beginning 20 "However." 21 A. Yeah. 22 Q. Okay. That's talking about the concept of 23 recall bias; right? 24 A. Uh-huh. 25 Q. And do you agree that recall bias can pose</p>
<p style="text-align: right;">Page 103</p> <p>1 if I'm not mistaken. 2 THE WITNESS: It could be earlier. 3 MR. TISI: But I think it is December. 4 MR. MARTIN: It says "May 2023" here. 5 MR. TISI: Maybe I'm wrong. I 6 apologize. 7 THE WITNESS: Yeah. Let me just -- May 8 2023 -- what is the title? 9 MR. MARTIN: "Douching and genital talc 10 use: Patterns of use and reliability of self- 11 reported exposure." 12 MS. PARFITT: This was one of the 13 articles that was put in the Dropbox on Monday, just 14 so you're aware of it. We put it in the Dropbox. 15 THE WITNESS: No. But I reviewed it. 16 Let me just go through -- give me one second. 17 MR. TISI: You want a copy? 18 MR. MARTIN: I have a copy of it or 19 should. 20 THE WITNESS: I have it. I have it. 21 MR. MARTIN: Can you just mark this? 22 MR. TISI: Are you done with the review 23 paper? 24 MR. MARTIN: I am. 25 MR. TISI: Thank you.</p>	<p style="text-align: right;">Page 105</p> <p>1 a problem in a retrospective epidemiological study? 2 A. That is correct. 3 Q. Okay. If you look at the next sentence, 4 which is the beginning of the following paragraph, 5 "Using data from the Sister Study, we examined 6 patterns of use and reliability of recall for two 7 feminine hygiene products thought to be associated 8 with gynecological (verbatim) cancers." And the end 9 of that sentence says "powder applied to the genital 10 area" is one of those two. Do you see that? 11 A. Yes. 12 Q. Okay. We'll skip the part on douching and 13 turn to page 383, which gets to some of the results 14 about ovarian cancer. Let's look beginning with 15 "The reliability," which is about the fourth line of 16 the page. 17 A. Which page? I'm sorry. 18 MS. PARFITT: 383. 19 MR. MARTIN: 383. 20 MS. PARFITT: I'm sorry. Are you under 21 "discussion"? 22 MR. MARTIN: No. I'm sorry. I'm in the 23 paragraph that precedes "discussion." 24 THE WITNESS: Okay. 25 MS. PARFITT: How far down?</p>

<p style="text-align: right;">Page 106</p> <p>1 MR. MARTIN: Four lines. Starts with</p> <p>2 "The reliability."</p> <p>3 THE WITNESS: Yeah.</p> <p>4 Q. "The reliability measures for genital talc</p> <p>5 use were similar for ovarian cancer compared to the</p> <p>6 full sample. However, while self-reported use in</p> <p>7 the 12 months before enrollment was more commonly</p> <p>8 reported on the enrollment questionnaire -- 27</p> <p>9 percent -- relative to the fourth detailed follow-up</p> <p>10 questionnaire -- 21 percent -- in the full sample,</p> <p>11 the trend was reversed among those with intervening</p> <p>12 ovarian cancer diagnoses, with 28 percent</p> <p>13 self-reporting genital talc use at enrollment and 33</p> <p>14 percent self-reporting genital talc use on the</p> <p>15 follow-up questionnaire." Let's unpack this a</p> <p>16 little bit.</p> <p>17 For the full sample, it looks like self-</p> <p>18 reported talc use was higher at the beginning than</p> <p>19 it was in a later follow-up questionnaire, 27 to 21.</p> <p>20 A. Give me a second to read.</p> <p>21 Q. No problem.</p> <p>22 A. There's so many different things here.</p> <p>23 Yeah. So self-reported use in the 12 months before</p> <p>24 enrollment was more commonly reported in the -- 27</p> <p>25 to -- okay. Yeah. Got it.</p>	<p style="text-align: right;">Page 108</p> <p>1 I mean, it's probably not increased. But,</p> <p>2 you know, it's not the same sample that began and</p> <p>3 the same sample that reported at the end.</p> <p>4 Q. Do you have any reason to believe that the</p> <p>5 people who dropped --</p> <p>6 MS. PARFITT: No. Please. Go ahead.</p> <p>7 Q. Do you have any reason to believe that the</p> <p>8 people who dropped out between the first and fourth</p> <p>9 questionnaire would be systematically as opposed to</p> <p>10 randomly different than the group as a whole?</p> <p>11 A. I mean, we'll have to look at, you know,</p> <p>12 who are the dropouts; what are their</p> <p>13 characteristics; how much was the dropout. And</p> <p>14 we'll have to look at that.</p> <p>15 And, you know, particularly if dropout is</p> <p>16 related to something with talc, such as ovarian</p> <p>17 cancer, then these estimates become, you know --</p> <p>18 were people taking it, getting ovarian cancer, and</p> <p>19 then dropping out? I don't know.</p> <p>20 Q. Let's look at the subgroup that does</p> <p>21 involve intervening ovarian cancer diagnoses, which</p> <p>22 is the second half of that sentence. "The trend was</p> <p>23 reversed among those with intervening ovarian cancer</p> <p>24 diagnoses, with 28 percent self-reporting genital</p> <p>25 talc in enrollment and 33 percent self-reporting</p>
<p style="text-align: right;">Page 107</p> <p>1 Q. So does that suggest that some women may</p> <p>2 have underreported their exposures in the later</p> <p>3 questionnaire?</p> <p>4 MS. PARFITT: Objection. Form.</p> <p>5 A. I'm not sure that's what it suggests.</p> <p>6 Q. What else could it suggest?</p> <p>7 A. Well, you know, there's -- is it the same</p> <p>8 sample? For example, if you look at the same --</p> <p>9 paragraph down, I mean, half of the women diagnosed</p> <p>10 with ovarian cancer expired. So are we looking at</p> <p>11 the same sample? Before we can even interpret these</p> <p>12 numbers -- so if you had women with -- if you are</p> <p>13 losing the sample, I can't compare the estimates --</p> <p>14 Q. Well, this is the full sample; right? It's</p> <p>15 not the sample limited to ovarian cancer-diagnosed</p> <p>16 women.</p> <p>17 A. Yeah. But it is following -- it is the</p> <p>18 full sample. Then you have to get to the fourth</p> <p>19 questionnaire; right? You have to get to the fourth</p> <p>20 questionnaire. Between the enrollment and the</p> <p>21 fourth questionnaire -- that's what they're saying</p> <p>22 -- half of the women diagnosed -- so at least</p> <p>23 relevant to the ovarian cancer, I don't know how to</p> <p>24 interpret these numbers as being decreased reporting</p> <p>25 or increased reporting.</p>	<p style="text-align: right;">Page 109</p> <p>1 genital talc use on the follow-up questionnaire."</p> <p>2 So in that group that had an intervening</p> <p>3 ovarian cancer diagnosis, more people reported talc</p> <p>4 use after the diagnosis than before. Is that your</p> <p>5 understanding?</p> <p>6 A. No.</p> <p>7 Q. No, it's not?</p> <p>8 A. I think you can't compare the samples. I</p> <p>9 mean, you know, they are comparing. That's fine.</p> <p>10 But to interpret these numbers, you'd have to know</p> <p>11 attrition, attrition by talc, and their</p> <p>12 characteristics. I can't really -- I can't affirm</p> <p>13 the conclusions that 28 increased with 33 is</p> <p>14 consistent.</p> <p>15 Q. Let's look at what the authors of this</p> <p>16 article said about those numbers, and let me try to</p> <p>17 point you in the right direction.</p> <p>18 A. Can you give me one minute to read this?</p> <p>19 Q. Sure.</p> <p>20 MS. PARFITT: Thank you.</p> <p>21 Q. Happy to have you read it briefly on the</p> <p>22 record. If you're going to take a long time, I'd</p> <p>23 like to go off the record.</p> <p>24 A. No. No.</p> <p>25 MS. PARFITT: Finish. Are you done?</p>

<p style="text-align: right;">Page 110</p> <p>1 A. One more. Yeah. Ask the question, if 2 there's a question. I'll -- 3 Q. Let's look at the next sentence. "This was 4 the only subgroup for which the proportion of users 5 increased between enrollment and follow-up and could 6 indicate recall bias, i.e., over-reporting of talc 7 use among those with a history of ovarian cancer." 8 That's, I think, what we were talking about earlier. 9 Do you disagree with that statement there? 10 A. Yeah. I mean, I don't think that that's 11 what the results, you know, can be interpreted as. 12 I mean, for example, if you go back to the methods, 13 they say that, because the enrollment questionnaire 14 did not collect information between age 14 and one 15 year, it was impossible for a participant to report 16 never use on the enrollment and ever use on follow- 17 up without contradicting themselves. 18 Q. But in the full -- well, I'll put that 19 aside. Let's look at the next column, the end of 20 the first paragraph, "The observed increase." 21 MS. PARFITT: Page? I'm sorry. 22 MR. MARTIN: Again, page 383, the same 23 page. 24 MS. PARFITT: I appreciate that. 25 A. The second column?</p>	<p style="text-align: right;">Page 112</p> <p>1 recall bias here. 2 Q. Do you have a reason that the amount of 3 recall bias would be different in the surviving 4 group than the non-surviving group? 5 A. It could be. Yeah. I mean, without 6 looking at the characteristics, you -- and, you 7 know, I mean, it's not a small number as 8 approximately half the women diagnosed with ovarian 9 cancer expire. 10 Q. I just want to follow up. You said "it 11 could be different." Do you have any bases here 12 today for why it would be different? 13 MS. PARFITT: Objection. Asked and 14 answered. 15 A. Yeah. I mean, you know, I don't -- I don't 16 have that data because they don't provide the data 17 on the women who expired and what are their 18 characteristics. 19 Q. Even if you disagree with some of the 20 conclusions drawn by the authors of this article, do 21 you think the article is relevant to your 22 supplemental report? 23 A. Yeah. So the question about relevance and 24 the reason now I recall is -- I obviously included 25 it in the list. And this is a discussion -- it does</p>
<p style="text-align: right;">Page 111</p> <p>1 Q. Second column beginning "The observed." 2 A. Beginning the -- which -- second paragraph? 3 Q. The first paragraph, the paragraph that 4 carries over from the previous. 5 A. Yeah. 6 Q. "The observed increase." 7 A. Yeah. 8 Q. "The observed increase in self-reported 9 genital talc use at follow-up relative to enrollment 10 among ovarian cancer survivors may indicate recall 11 bias is present and potentially driving some of the 12 previously observed differences in effect estimates 13 between studies collecting genital powder exposure 14 status retrospectively versus prospectively." 15 A. It's interesting. That line is very 16 interesting, I mean, because, A, you did not collect 17 as they -- I'll restate it. They did not collect 18 between 14 and one year before enrollment. So 19 that's one. 20 And they're talking about ovarian cancer 21 survivors. Well, what happens to women who get 22 ovarian cancer? How many survive? So we have a 23 highly lethal cancer. So the sample -- you know, 24 you'd have to look at all people -- survivor, 25 non-survivors -- to really make a judgment about</p>	<p style="text-align: right;">Page 113</p> <p>1 not provide direct data on talc and ovarian cancer. 2 But it discusses recall bias in the Sister Study. 3 But there's no data on talc and ovarian 4 cancer, per se, in this article, that it decreases 5 ovarian cancer or increases. Either way, it does 6 not refute. That's not the focus of this article. 7 I mean, is there somewhere that I didn't miss? 8 Q. No. 9 A. Yeah. So it does not provide any -- as I 10 outlined in the methods, I was looking at original 11 data on talc and ovarian cancer. 12 Q. Is this article in your Appendix A under 13 the excluded articles? 14 A. No. I don't think so. 15 Q. Okay. 16 A. Yeah. 17 Q. There a reason why it wasn't even in the 18 excluded list in Appendix A? 19 A. Yeah. I don't recall -- I mean, there were 20 so many references that, you know, I examined. So 21 -- but, again, it does not provide the data on talc 22 and ovarian cancer. But it's not that it's not -- 23 you know, there's -- we discussed it and, you know, 24 addressed as issues around recall bias. 25 Q. Generally, do you believe that everything</p>

<p style="text-align: right;">Page 114</p> <p>1 responsive to your Scopus and PubMed search queries 2 should be in Exhibit A? 3 A. Yeah. Yeah. 4 Q. Okay. You can put that aside. Is it 5 standard practice in your experience for authors of 6 scientific literature to disclose conflicts of 7 interest if they're serving as a litigation expert? 8 A. Any kind of -- you know, either litigation 9 expert or consulting for the company or doing 10 something else. I mean, it's standard practice. 11 Journals require it. It's not an optional thing. 12 Q. Have you published on talc and ovarian 13 cancer -- 14 A. No. 15 Q. -- since becoming an expert? If you were 16 to do so, though, you would note your -- 17 A. For sure. 18 Q. -- conflict of interest. Okay. And as a 19 reader of scientific literature, is it something you 20 consider important when you're evaluating a 21 scientific study? 22 A. I mean, it is a factor among other factors, 23 bias. I mean, the predominant factor is 24 methodology. I mean, that is the driving factor. 25 But, yes, bias --funding bias, you know, whether</p>	<p style="text-align: right;">Page 116</p> <p>1 Q. When you were performing your qualitative 2 evaluation of the studies in your expert report, did 3 you consider whether an article author was a paid 4 litigation expert? 5 MS. PARFITT: Objection. Form. 6 A. I mean -- 7 MS. PARFITT: Please answer. 8 A. Yeah. I mean, I considered it. But, 9 again, I think I answered the question -- is that 10 the primary consideration was, A, what is the 11 methodology they're talking about? What are the 12 issues at stake? And, you know, obviously whether 13 they are experts is a consideration. 14 Q. All else being equal, would you have fewer 15 bias concerns with a paper published by a neutral 16 author than by a defense expert? 17 MS. PARFITT: Objection. 18 A. I mean, I think that, to me -- I hate to 19 say it -- but in this realm, I mean, there have been 20 so many papers published by defense experts as well 21 as, you know, some papers by experts in plaintiffs 22 that if one were to start excluding all those, then, 23 you know, the body of literature would be, like -- 24 why -- you have to -- I mean, if it comes up peer- 25 reviewed literature, I have to evaluate.</p>
<p style="text-align: right;">Page 115</p> <p>1 it's manufacturer, whether it's expert witnesses or 2 testimony, consultants. 3 It is a factor. And the way it is a factor 4 is interpretation, you know. One has to rely that 5 the findings in the peer-reviewed literature, at 6 least to the extent that they've been undergoing 7 peer review, are, you know, rigorous. And, you 8 know, obviously one has to examine the methods. But 9 disclosure is important. 10 Q. Is there a way -- did you perform -- did 11 you quantitatively weigh the importance of the 12 studies included in your 2023 expert report? 13 A. No. 14 Q. Okay. Is there a way we could tell from 15 reviewing your report whether one study was more 16 important than another in the formation of your 17 opinion? 18 A. I mean, you'd have to look at the 19 description about strength and limitations. But, 20 again, that's not a numerical value. 21 Q. Is the fact that an author is -- 22 MR. MARTIN: Can we take a break here? 23 Go off the record. 24 (A break was taken) 25 MR. MARTIN: Back on the record.</p>	<p style="text-align: right;">Page 117</p> <p>1 And if the methodology is sound, then, you 2 know, you have to acknowledge that yes, they are. 3 And -- but you have to go by the methodology really. 4 Q. So it is something you acknowledge? 5 MS. PARFITT: Objection. Form. 6 A. Yeah. I mean, I may not have stated it 7 explicitly. But that is important to acknowledge. 8 MR. MARTIN: Let's break for lunch. Off 9 the record. 10 (A break was taken) 11 MR. MARTIN: Back on the record. So 12 let's mark as Exhibit 14 Gabriel 2019, "Douching, 13 talc use, and risk for ovarian cancer." 14 (2019 article by Iwona M. Gabriel, et 15 al., Exhibit 14, marked) 16 Q. You've seen this document before; right? 17 A. Yes. 18 Q. You cite it in your 2023 report; right? 19 A. That is correct. 20 Q. And this is a case control study from 2019; 21 right? 22 A. That's correct. 23 Q. And it's the same data that were previously 24 reported in Cramer 2016? 25 A. I'm not sure entirely. I mean, I didn't</p>

<p style="text-align: right;">Page 118</p> <p>1 duplicate, you know -- this was a new study, 2 provided data on association between talc and 3 ovarian cancer. Yeah. But it did include, you 4 know, the eastern Massachusetts and New Hampshire 5 cohort, you know -- cohort. 6 Q. If you look at 1835, which is the first 7 page, under "materials and methods," you'll see 8 "Details regarding enrollment are described 9 elsewhere." Then it's Reference 10. Then 10 Reference 10 is to the Cramer 2016 article. Do you 11 see that? 12 A. Yes. 13 Q. Okay. In fact, Dr. Cramer is also a 14 co-author on this article; right? 15 A. Yes. 16 Q. Okay. We talked a little bit before lunch 17 about litigation conflicts. So let's check the 18 second-to-last page, "Disclosure of potential 19 conflicts of interest." Do you see that? 1843. 20 A. Uh-huh. 21 Q. "A.F. Vitonis has provided statistical 22 programming to support expert testimony for Beasley 23 Allen law firm. D.W. Cramer has provided expert 24 testimony for Beasley Allen law firm." Does this 25 say what the subject of Dr. Cramer's expert</p>	<p style="text-align: right;">Page 120</p> <p>1 MR. MARTIN: Understood. 2 A. I mean, they would go through -- if they 3 went through Beasley Allen, yes, they could. But I 4 don't -- I can't put myself in their situation. 5 Q. Okay. You'd agree it doesn't explicitly 6 say that. 7 A. Exactly. 8 Q. Is the fact that it involves talc something 9 that would be relevant for you to know? 10 MS. PARFITT: Objection. Form. 11 A. Right. For me, it doesn't because -- so 12 when I look at articles and the disclosure, when I 13 look at a disclosure section, I'm assuming that 14 disclosure is relevant. That's why they're making 15 the disclosure. I mean, it's either funding or -- 16 you know, it's NIH, NCI, we do disclose. FDA, I 17 disclose. And/or if it's expert testimony, then 18 it's relevant to the subject matter at hand. But, 19 obviously, it's not explicit here. 20 Q. Would you as a reader want to know whether 21 he consulted for defendants or plaintiffs? 22 MS. PARFITT: Objection. Form. 23 A. I can't tell the reader -- I mean, I know 24 and, you know -- potential reader would want to 25 know, yes, I mean.</p>
<p style="text-align: right;">Page 119</p> <p>1 testimony was? 2 A. No. 3 Q. Does it say who Beasley Allen represented? 4 A. No. 5 Q. Okay. You're aware that Dr. Cramer is a 6 plaintiffs' expert in talc litigation; right? 7 A. I'm not sure he is, but he was at some 8 point. 9 Q. I'm sorry. Yes. You're aware that he was. 10 A. Yeah. At some point in time. 11 Q. Would the fact that the litigation 12 referenced in the conflicts of interest disclosure 13 involved talc be something that would be relevant to 14 you as a reader? 15 MS. PARFITT: Objection. Form. 16 A. Can you restate the question? 17 Q. Sure. Do you understand this testimony 18 that Dr. Cramer provided for Beasley Allen to be 19 related to talc? 20 A. Yes. 21 Q. Okay. Do you think that a reader who is 22 not involved in the litigation would understand 23 that? 24 MS. PARFITT: Objection as to what 25 another reader would understand or not.</p>	<p style="text-align: right;">Page 121</p> <p>1 MS. PARFITT: Objection to "potential 2 reader would want to know." 3 Q. Did you consider Dr. Cramer and 4 Dr. Vitonis's conflict of interest when you were 5 evaluating this paper for your expert report? 6 A. As I stated earlier, I think my answer to 7 that question will be sort of consistent, and, you 8 know, I -- I'm aware of it. But, you know, it's the 9 methodological issues. 10 This is a supplemental report of -- what -- 11 17, 20 pages. I'm aware of those conflicts, and I 12 consider it. But I don't think that was the major 13 consideration. It's the methodologic issues. The 14 fact they provided new data and the fact that they 15 reported an increased risk, those are the 16 considerations. 17 Q. You don't note that fact in your report? 18 A. No, I don't. 19 Q. You'd agree with me? 20 A. But I did consider it. 21 Q. Can we turn to the next page, 1844, 22 "Acknowledgments," second column, "The costs of 23 publication of this article were defrayed in part by 24 the payment of page charges. The article must, 25 therefore, be hereby marked 'advertisement' in</p>

<p style="text-align: right;">Page 122</p> <p>1 accordance with 18 USC, Section 1734 solely to 2 indicate this fact." Did you notice this disclaimer 3 when you initially read the Gabriel article? 4 A. Yeah. I mean, I focused on the 5 acknowledgments, and I focused on the disclosure. I 6 did not notice that in the disclaimer as an 7 advertisement. 8 Q. Have you seen a disclaimer like that in the 9 scientific literature before? 10 A. I mean, I've not gone and looked for it, 11 but. 12 Q. So the answer to the question is "no"? 13 A. No. 14 Q. Okay. Let's -- 15 MS. PARFITT: I object to that. 16 Misstates what he said. He said he's not looked for 17 it. 18 A. To clarify that -- since we are on the 19 topic -- to the disclaimer part, yes, the cost of 20 publication was defrayed. I mean, we also put it. 21 But the second part, you know, I have not seen. 22 Q. Understood. So it's the second sentence -- 23 A. About advertisement. 24 Q. Okay. 25 A. But the costs, yes, we -- in fact, my</p>	<p style="text-align: right;">Page 124</p> <p>1 Q. Can I refocus the question? 2 A. Sure. 3 Q. The fact that slightly more cases than 4 controls had reported exposure to genital talc would 5 be consistent with an increase in risk; correct? 6 A. Yes. 7 Q. Okay. Let's look at the next row, women 8 who have had a tubal ligation. Okay? 9 A. Yes. 10 Q. 36.5 percent of cases and 26 percent of 11 controls reported using genital talc; correct? 12 A. Yes. 13 Q. Okay. You'd agree with me that's a larger 14 difference than the difference for women who 15 reported tubal ligation? 16 A. Yeah. But the overall numbers are so 17 small. I mean, if you look at the sample size, we 18 are talking about 541 cases versus 440 controls and 19 then 101 versus, you know, 310. So it's -- sorry -- 20 Q. Okay. 21 MS. PARFITT: Let him finish. 22 MR. MARTIN: I'll let you finish. 23 A. 101 versus 310, those are not comparable. 24 But the magnitude of the difference is higher. 25 Q. Okay. How do you explain the fact the</p>
<p style="text-align: right;">Page 123</p> <p>1 recent article has that. 2 Q. Can you look at Table 1 in the body of the 3 report, which is on page 1837? Towards the bottom, 4 you can look at "tubal ligation." Just tell me when 5 you've gotten there. 6 A. Yes. 7 Q. Okay. So you look at the cases -- which 8 would be the women with ovarian cancer; correct? 9 A. Uh-huh. 10 Q. Okay. 11 A. Yes. Yes. 12 Q. And you see that 30.7 percent of them -- 13 looking at the women -- I'm sorry. Looking at the 14 women who have not undergone tubal ligation, you see 15 that 30.7 percent of the cases had used genital 16 talc. 17 A. Yes. 18 Q. And 26.2 percent of the controls? 19 A. Yes. 20 Q. And that would be consistent with what 21 you'd expect if talc were associated with a slight 22 increase in risk; correct? 23 MS. PARFITT: Objection. Form. 24 A. Let me just get back to the numbers. Give 25 me a second.</p>	<p style="text-align: right;">Page 125</p> <p>1 magnitude of the difference is higher among women 2 who have had a tubal ligation than among women who 3 have intact genital tracts? 4 A. I mean, their primary analysis focused on, 5 you know, reporting risks based on adjustment 6 factors and the reported increased risk. It is 7 entirely plausible that it is even increased in 8 those who have tubal ligation. So that, you know -- 9 it's not that those findings are incompatible with 10 biological plausibility. 11 Q. I guess I'm asking why the difference in 12 risk would be larger among women with tubal ligation 13 than among women without. 14 A. First of all, none of the tests that -- if 15 you look at the -- if you're looking at the -- the 16 difference is not -- is not -- I would say 30.7, 17 26.2 -- and, you know, tests for interactions there 18 are not significant. So I don't see that as being 19 any materially different. 20 Q. So do you think it's just maybe statistical 21 noise? 22 A. Could be statistical noise. 23 Q. Okay. 24 A. I mean, not noise. I would say, I mean, it 25 is a finding. So you have to go by what they</p>

<p style="text-align: right;">Page 126</p> <p>1 reported. But it is entirely plausible that women 2 who had tubal ligation also had an increase. The 3 magnitude of -- I think the magnitude of risk is 4 sort of not a relevant -- very relevant 5 consideration right here. 6 Q. You mentioned that the -- strike that. 7 You'd agree that the authors of Gabriel 8 2019 did not calculate separate odds ratios for 9 women with intact tubes and women without? 10 A. They adjusted for it. 11 Q. Correct. But they did not calculate 12 separate ratios. 13 A. No. 14 Q. Okay. So we talked about this involving 15 some of the same cases and controls as Cramer. So I 16 do want to look at the Cramer study, Cramer 2016. 17 MS. PARFITT: I will just note that, on 18 pages 194 all the way through, there's a significant 19 discussion of the Cramer 2016 article in the first 20 deposition in 2019. 21 MR. MARTIN: I am aware it was discussed 22 in the first deposition. I will keep this very 23 short. I want to talk about specifically one 24 sentence that is in the 2023 expert report. 25 MS. PARFITT: Very good. I appreciate</p>	<p style="text-align: right;">Page 128</p> <p>1 classified controls fell to 82 percent or 18 2 percent. 3 Q. I guess my question is about your 4 understanding of the term "nullified." Does it mean 5 the risk ratio would be 1.0, or does it mean the 6 risk ratio would be statistically insignificant? Or 7 does it mean something else? 8 A. I mean, it means an odds ratio would be 9 statistically insignificant. 10 Q. But it could still be elevated over 1.0? 11 MS. PARFITT: Objection. Form. 12 A. Let me just -- 13 Q. I'll strike the question. 14 So let's look at the portion of Cramer that 15 you just quoted, which is beginning on page 341, the 16 final paragraph. 17 A. 341. Yes. 18 Q. Okay. "Addressing recall bias, we 19 conducted a sensitivity analysis that assumed truly 20 nonexposed cases and controls were accurately 21 classified as unexposed, i.e., specificity 99 22 percent." 23 Do you know whether that assumption, that 24 all truly nonexposed cases were correctly 25 classified, is a realistic one?</p>
<p style="text-align: right;">Page 127</p> <p>1 that. Thank you. 2 (2016 article by Daniel W. Cramer, et 3 al., Exhibit 15, marked) 4 MR. TISI: Remind me the exhibit. I 5 apologize. 6 MR. MARTIN: 15. 7 MR. TISI: Thank you. 8 A. Which page? 9 Q. Let's look at 12, page 12 of your 10 supplemental expert report. 11 A. Yes. 12 Q. In that list of bullets, it's the fourth 13 bullet -- 14 A. Yeah. 15 Q. -- "Cramer, et al. included an 18 percent 16 buffer to account for recall bias before nullifying 17 their study results." When you say "included an 18 18 percent buffer," do you mean -- well, what do you 19 mean by that? 20 A. Yeah. So they have a "discussion" section 21 where they talk about -- let's go to the 22 "discussion" section. Starting from 341, addressing 23 recall bias, we conducted sensitivity of the 24 analysis, and then the odds ratio of 133 -- 1.33 25 would be nullified if the sensitivity of correctly</p>	<p style="text-align: right;">Page 129</p> <p>1 MS. PARFITT: Objection. Form. 2 A. Yeah. I mean, it is to the extent that why 3 would nonexposed people recall talc exposure. It is 4 a reasonable assumption. 5 Q. Okay. Do you know if it's empirically 6 realistic? 7 MS. PARFITT: Objection. Form. 8 A. I don't understand that word. My English 9 is poor. What is "empirically realistic"? Is it 10 reasonable, unreasonable? 11 Q. Do you know if there are any data on the 12 reliability of recall? 13 A. Yeah. We were looking at that data, and we 14 just looked at Exhibit 13. And they said, you know 15 -- 16 MS. PARFITT: Could you identify the 17 article? O'Brien? 18 A. O'Brien. And they said classification of 19 ever use of feminine genital products may be 20 recalled with good -- I mean, I don't know the 21 numbers there, but they can recall with good 22 consistence. I have no reason to suspect that the 23 assumption that Dr. Cramer makes is suspect. 24 MS. PARFITT: Dr. Singh, if I can just 25 ask one thing -- and Mr. Martin. For the court</p>

<p style="text-align: right;">Page 130</p> <p>1 reporter, when you start talking fast when you're</p> <p>2 reading an article, she may not catch the words</p> <p>3 you're reading from the article.</p> <p>4 MR. MARTIN: Please, if anyone is</p> <p>5 talking too quickly and you're not getting it down,</p> <p>6 please let me know.</p> <p>7 Q. Well, let's look at the next clause in the</p> <p>8 Cramer article.</p> <p>9 A. Sure.</p> <p>10 Q. The next assumption that Dr. Cramer makes</p> <p>11 is "Truly exposed cases were also correctly</p> <p>12 classified, sensitivity 99 percent." Do you assume</p> <p>13 -- do you know whether that's a realistic</p> <p>14 assumption?</p> <p>15 MS. PARFITT: Objection. Form.</p> <p>16 A. I mean, I don't see data elsewhere to</p> <p>17 support that it is otherwise.</p> <p>18 Q. Okay.</p> <p>19 A. I mean, you know, it -- 99 percent, 98</p> <p>20 percent, I don't see data elsewhere.</p> <p>21 Q. So you don't know one way or another?</p> <p>22 A. Yeah. I mean, that's an assumption. And,</p> <p>23 you know, it's a reasonable assumption.</p> <p>24 Q. Okay. Next sentence, "The OR of 1.33 in</p> <p>25 our study would be nullified if the sensitivity of</p>	<p style="text-align: right;">Page 132</p> <p>1 A. A lifestyle variable and cancer.</p> <p>2 Q. But to be clear, it's about alcohol, not</p> <p>3 about cosmetic use.</p> <p>4 A. That is correct.</p> <p>5 Q. Okay. And to go in between where you read</p> <p>6 and I read, the sentence starting with</p> <p>7 "Unfortunately," "Unfortunately, there are no</p> <p>8 external records to validate talc use reported by</p> <p>9 study participants to assess whether this degree of</p> <p>10 misclassification is reasonable." Are you aware of</p> <p>11 any external records that -- any such external</p> <p>12 records?</p> <p>13 MS. PARFITT: Used by the investigators</p> <p>14 in this study?</p> <p>15 MR. MARTIN: No.</p> <p>16 Q. Are you aware of any such external records</p> <p>17 that have come into existence since 2016?</p> <p>18 MS. PARFITT: Objection.</p> <p>19 A. Well, yeah. I mean, we discussed the</p> <p>20 Sister Study that, you know, assessed. But it</p> <p>21 doesn't assess whether this degree of --</p> <p>22 Q. Okay.</p> <p>23 A. I mean, I saw the other Goodman study,</p> <p>24 which talks about different misclassifications. But</p> <p>25 I'm not sure that, you know -- we can discuss it --</p>
<p style="text-align: right;">Page 131</p> <p>1 correctly classified controls fell to 82 percent or</p> <p>2 18 percent misclassification." That's what you're</p> <p>3 basing your 18 percent buffer on?</p> <p>4 A. Exactly.</p> <p>5 Q. Okay. Do you know if 18 percent is a</p> <p>6 reasonable estimate of misclassification?</p> <p>7 A. I think they cite, you know -- they go to</p> <p>8 other studies of -- at that time at least. You</p> <p>9 know, they go to other studies and say "Well, let's</p> <p>10 look at, you know, assumptions about control</p> <p>11 classification."</p> <p>12 And I think they have it about -- they talk</p> <p>13 about they found an age-adjusted OR for breast</p> <p>14 cancer -- just below that line -- of 1.42 associated</p> <p>15 with 30 or more grams from the prospective data</p> <p>16 compared to 1.33.</p> <p>17 So I think, they're using that, this change</p> <p>18 would occur if the sensitivity of controls correctly</p> <p>19 used drop to 1 percent or 9 percent; this suggests</p> <p>20 some degree of misclassification but not as great as</p> <p>21 80 percent required to nullify.</p> <p>22 Q. That section that you just read is about</p> <p>23 the relationship between breast cancer and alcohol?</p> <p>24 A. Yes.</p> <p>25 Q. Okay.</p>	<p style="text-align: right;">Page 133</p> <p>1 whether that's reasonable. It has two, you know --</p> <p>2 Q. You can probably conduct this deposition by</p> <p>3 yourself because that's what I want to get at right</p> <p>4 now.</p> <p>5 MR. MARTIN: If we can mark Goodman</p> <p>6 2024.</p> <p>7 (2024 article by Julie E. Goodman, et</p> <p>8 al., Exhibit 16, marked)</p> <p>9 Q. All right. So I have had marked as Exhibit</p> <p>10 16 Julie Goodman, et al., "Quantitative recall bias</p> <p>11 analysis of the talc and ovarian cancer</p> <p>12 association." This study was published in 2024.</p> <p>13 So I assume -- well, so it was not,</p> <p>14 obviously, in your expert report. But it was</p> <p>15 produced to us on Monday by your lawyers or by</p> <p>16 plaintiffs' lawyers. You've -- you're familiar with</p> <p>17 this article?</p> <p>18 A. Yes. I have had a chance to read it.</p> <p>19 Q. And one of the things that -- well, the</p> <p>20 thing this article does is to evaluate the possible</p> <p>21 effects of recall bias on the Cramer study we just</p> <p>22 looked at. Right?</p> <p>23 A. Sure.</p> <p>24 Q. If you can turn to page 2 -- and I'll try</p> <p>25 to get there. If you could look at the second</p>

<p style="text-align: right;">Page 134</p> <p>1 column of page 2 beginning "Of these studies." And</p> <p>2 if you can read down there for the next two</p> <p>3 paragraphs, and I'll ask you some questions about</p> <p>4 it.</p> <p>5 A. Which one? The second column?</p> <p>6 Q. Second column, the first two paragraphs of</p> <p>7 the second column.</p> <p>8 A. "In the published case control studies on</p> <p>9 talc"?</p> <p>10 Q. Yes. Correct.</p> <p>11 A. Okay. Of these studies, only Cramer</p> <p>12 conducted a recall bias and so did (verbatim) using</p> <p>13 point estimates of sensitivities and specificity</p> <p>14 rather than distribution. The investigators</p> <p>15 recalculated the ORs assuming 99 percent recall in</p> <p>16 cases and 99 -- and 82 percent recall specificity</p> <p>17 and sensitivity in controls using the assumptions</p> <p>18 the OR was 1.</p> <p>19 Q. Would you agree with me that what the</p> <p>20 authors are saying here is that, using different</p> <p>21 assumptions than Dr. Cramer, that they produced</p> <p>22 further attenuated results?</p> <p>23 A. I haven't even read that. Yeah. But in</p> <p>24 this analysis -- but I have my, you know -- since I</p> <p>25 reviewed it and it came out in '24, I have my</p>	<p style="text-align: right;">Page 136</p> <p>1 a triangular distribution. In the first column in</p> <p>2 that page, they talk about a triangular distribution</p> <p>3 because it is an ideal distribution where the only</p> <p>4 data on hand are the maximal, minimal values and the</p> <p>5 most likely outcome.</p> <p>6 That is not entirely correct. You have</p> <p>7 maximal and minimal. But you also have median or</p> <p>8 mode. And in this case, you know, if you use a</p> <p>9 triangular distribution versus other distributions</p> <p>10 like port (verbatim) or others, triangular</p> <p>11 distributions give weights to the tails. So that's</p> <p>12 why their confidence was wider.</p> <p>13 Other ways to analyze this data using other</p> <p>14 distributions would give much more curve than --</p> <p>15 give weight to the shoulders. So I don't agree with</p> <p>16 their analysis.</p> <p>17 Q. You said it would give different confidence</p> <p>18 intervals. Would it give a different point</p> <p>19 estimate?</p> <p>20 A. Yes. Yeah. I mean, the shapes are</p> <p>21 different.</p> <p>22 Q. Okay. Let's move on to the next exhibit,</p> <p>23 which is O'Brien 2020.</p> <p>24 MR. MARTIN: Actually, before we do</p> <p>25 that, can we look at the Cramer study one more time?</p>
<p style="text-align: right;">Page 135</p> <p>1 opinions on it.</p> <p>2 Q. So let me ask you. How does this paper</p> <p>3 affect your opinions of Cramer 2016?</p> <p>4 A. Yeah. I will provide those opinions.</p> <p>5 First of all, you know, I reviewed it. There are</p> <p>6 several considerations in this paper. So the</p> <p>7 question is, when they are doing these recall bias</p> <p>8 analysis, where are they getting the numbers from?</p> <p>9 They're getting it from the Sister Study,</p> <p>10 sensitivity, spes -- that's one. And we discussed</p> <p>11 the issues with that.</p> <p>12 Then they are quite explicit that all their</p> <p>13 Analysis D, Scenario 3, Scenario 4, Scenario 5 are</p> <p>14 -- none of them adjust for any confounders. So this</p> <p>15 is all unadjusted analysis. So, again, if</p> <p>16 confounding is an issue in case control studies, I</p> <p>17 don't know what weight to put on the analysis when</p> <p>18 they are all unadjusted.</p> <p>19 Q. Do you know whether adjustment for</p> <p>20 confounding would increase or decrease the</p> <p>21 association?</p> <p>22 A. I don't know here. You know, I don't know.</p> <p>23 So they state that these are unadjusted. And</p> <p>24 perhaps, even more importantly, the method that they</p> <p>25 use is known as a triangular distribution. We chose</p>	<p style="text-align: right;">Page 137</p> <p>1 MS. PARFITT: Cramer '16?</p> <p>2 THE WITNESS: Which is what number?</p> <p>3 MS. PARFITT: 15. It's No. 15.</p> <p>4 Q. Can we look at Table 2?</p> <p>5 A. Yes.</p> <p>6 Q. Do you see that they -- in this case, they</p> <p>7 separately calculated odds ratios for hysterectomy,</p> <p>8 for intact or nonintact genital tracts?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And do you see that the point</p> <p>11 estimate for women who have had hysterectomy or</p> <p>12 tubal ligation is higher than the point estimate for</p> <p>13 women who have not?</p> <p>14 MS. PARFITT: I'm going to object. This</p> <p>15 specific exact question was asked on page 196 of his</p> <p>16 2019 deposition, I mean, down to the page number,</p> <p>17 carrying over from the bottom of page 337 over to</p> <p>18 338.</p> <p>19 And the question was about tubal</p> <p>20 ligation and hysterectomy. The question was about</p> <p>21 the protective or lack thereof nature of those</p> <p>22 diseases -- of that process.</p> <p>23 MR. MARTIN: Can we go off the record</p> <p>24 for a moment?</p> <p>25 MS. PARFITT: Yes.</p>

<p style="text-align: right;">Page 138</p> <p>1 (A break was taken)</p> <p>2 MR. MARTIN: Back on the record. Let's</p> <p>3 move on to O'Brien 2020, which postdates your most</p> <p>4 recent deposition and report, and which we can mark</p> <p>5 as Exhibit 17.</p> <p>6 (2020 article by Katie M. O'Brien, et</p> <p>7 al., Exhibit 17, marked)</p> <p>8 A. Do you have the supplement tables for this?</p> <p>9 Q. Not in this document. I believe I have</p> <p>10 them elsewhere.</p> <p>11 A. Can I use my copy of supplements?</p> <p>12 Q. Sure.</p> <p>13 MS. PARFITT: Yes.</p> <p>14 MR. MARTIN: Yes. So this --</p> <p>15 MS. PARFITT: Give him one second here.</p> <p>16 Okay. Good. Thank you.</p> <p>17 Q. We talked about Dr. O'Brien and</p> <p>18 Dr. Wentzensen earlier. You agree that they're</p> <p>19 well-regarded?</p> <p>20 A. I don't know if they are well-regarded. We</p> <p>21 talked about that they worked for, you know, NIEHS.</p> <p>22 Yeah. I have nothing against scientists, you know,</p> <p>23 whether -- Dr. Cramer is well-regarded too. He's</p> <p>24 done tons of studies on ovarian cancer.</p> <p>25 Q. This article was published in JAMA. Are</p>	<p style="text-align: right;">Page 140</p> <p>1 MR. MARTIN: Understood.</p> <p>2 Q. Can you look at the first sentence of the</p> <p>3 "results" section in the abstract on the first page.</p> <p>4 What's the sample size for this study in terms of</p> <p>5 number of women?</p> <p>6 A. 252, 745.</p> <p>7 Q. Okay. And it talks about something called</p> <p>8 "person years." You understand that to be -- well,</p> <p>9 what do you understand person years to be?</p> <p>10 A. Yeah. It's exposure time, you know,</p> <p>11 follow-up during that study period.</p> <p>12 Q. What is the number of person years at issue</p> <p>13 in this study?</p> <p>14 A. 3.8 million.</p> <p>15 Q. Okay. Can we turn to Table 2, which is on</p> <p>16 page 53?</p> <p>17 A. Sure.</p> <p>18 MS. PARFITT: Just to be clear, not the</p> <p>19 supplemental table but --</p> <p>20 MR. MARTIN: Correct. On page 53 of the</p> <p>21 primary article.</p> <p>22 MS. PARFITT: I'm sorry about that. I'm</p> <p>23 sorry. Okay.</p> <p>24 Q. At the bottom of the first half of this</p> <p>25 table, they have a pooled estimate for all women.</p>
<p style="text-align: right;">Page 139</p> <p>1 you familiar with that journal?</p> <p>2 A. I've published in it. So I'm quite</p> <p>3 familiar with it as you can see in my --</p> <p>4 Q. And I hope you would agree with me it's a</p> <p>5 prestigious journal.</p> <p>6 A. Yes, it is.</p> <p>7 Q. You've published in it, you said.</p> <p>8 A. Yes. Many times.</p> <p>9 Q. Do you read it?</p> <p>10 A. Yeah. I read it every week.</p> <p>11 Q. Would you agree with me that none of the</p> <p>12 authors here, to your knowledge, are experts on</p> <p>13 either side of this litigation?</p> <p>14 A. No. They're government -- I mean, as far</p> <p>15 as I'm aware, they are, you know, employees --</p> <p>16 MS. PARFITT: I didn't get to interpose</p> <p>17 an objection. I'm going to object. You may</p> <p>18 certainly answer.</p> <p>19 A. I'm not aware of their involvement. That's</p> <p>20 all.</p> <p>21 Q. Okay.</p> <p>22 MS. PARFITT: Zack, I'm not being</p> <p>23 difficult. I just don't know who you all are going</p> <p>24 to be submitting in May. Many of these people could</p> <p>25 show up.</p>	<p style="text-align: right;">Page 141</p> <p>1 Do you see that?</p> <p>2 A. That is correct.</p> <p>3 Q. What's the confidence interval on that</p> <p>4 pooled estimate?</p> <p>5 A. .99 to 1.17.</p> <p>6 Q. Would you agree with me that, as</p> <p>7 traditionally understood, that is not statistically</p> <p>8 significant?</p> <p>9 MS. PARFITT: Objection. Misstates the</p> <p>10 evidence and his testimony.</p> <p>11 A. Well, Dr. O'Brien herself in subsequent</p> <p>12 interpretations has concluded that there's a</p> <p>13 positive association between talc and ovarian cancer</p> <p>14 without any qualifications about patent or nonpatent</p> <p>15 tubes.</p> <p>16 Q. If you could just focus on the question I</p> <p>17 asked --</p> <p>18 A. Sure.</p> <p>19 Q. -- which is would you agree that a</p> <p>20 confidence interval that crosses 1 at a 95 percent</p> <p>21 value is not, as traditionally understood,</p> <p>22 statistically significant?</p> <p>23 MS. PARFITT: Objection. Completely</p> <p>24 misstates the state of science and his expert</p> <p>25 opinions.</p>

<p style="text-align: right;">Page 142</p> <p>1 A. Yeah. Can you repeat it? I'm sorry. I'm 2 trying to understand and answer. 3 Q. What do you understand -- you'd agree this 4 confidence interval -- this 95 percent confidence 5 interval crosses 1.0. 6 A. That is correct. 7 Q. Okay. You'd also agree that all of the -- 8 in each -- the confidence interval for each of the 9 individual cohorts crosses 1.0. 10 A. That is correct. 11 Q. Okay. You'd also agree that, for one of 12 the individual cohorts, the point estimate is below 13 1.0. 14 A. We should discuss that cohort because the 15 median follow-up time in that is 3.8 years, which is 16 not etiologically relevant for ovarian cancer. We 17 discussed person years. But we have 2168 with 18 ovarian cancer, where in the case control we have 19 15,000. So, yes, we should look at that. But we 20 also need to look at where are those numbers coming 21 from. 22 Q. Dr. Singh, I appreciate that you need to 23 give context. I'd appreciate it if you could focus 24 on the answer to my question because we have limited 25 time.</p>	<p style="text-align: right;">Page 144</p> <p>1 A. That is correct. 2 Q. That study is not driving the pooled 3 estimate? 4 A. That is correct. 5 Q. Can we turn to page 3 on Table 55? Looking 6 at the top of Table 3, you can see that the authors 7 here looked at different levels of use. 8 A. Yeah. They looked at, you know, frequency 9 and duration of use. 10 Q. Okay. Looking at long-term use for the 11 "all women" group, can you tell me what the adjusted 12 hazard ratio and confidence interval is? 13 A. Yeah. I'll provide that and also provide 14 what they mean by "long-term use." So the hazard 15 ratio -- adjusted hazard ratio, if I'm correct, is 16 1.01, .82 to 1.25. So, again, NHS has no data on 17 long-term use. 18 The only three studies that provide data on 19 long-term use are -- NHSII, VI, and WHI-OS define 20 very differently. "Long-term use" is defined in 21 NHSII as at least weekly for 20 years. In the 22 Sister Study, "long-term use" is defined as perineal 23 use at ages 10 to 13 and in the last 12 months. 24 And in the WHI study, "long-term use" is 25 defined as 20 or more years for any of the three</p>
<p style="text-align: right;">Page 143</p> <p>1 A. Right. I have to give context. I cannot 2 answer questions without context. 3 Q. Would the limited follow-up explain why the 4 point estimate is below 1.0? 5 A. Yes. 6 Q. How so? 7 A. Because they would not have sufficient 8 number of cases. You know, we -- they don't have 9 etiologically relevant exposure periods. You know, 10 three years of follow-up to really detect ovarian 11 cancer? 12 I mean, I don't think -- in my analysis, 13 this study should not have been -- you know, is not 14 really informative on the association. And, 15 actually, if you look at the ones that you were 16 pointing out -- the pooled hazard ratios -- the 17 confidence intervals for that are so wide that it's 18 just contributing very little information and weight 19 to the analysis. 20 These results that you see here, they are 21 driven by the NHS and WHI-OS. I can examine the 22 confidence, then tell you. The NHSII and VI are not 23 driving any of these results. 24 Q. The study with a 3.8-year follow-up is the 25 NHSII?</p>	<p style="text-align: right;">Page 145</p> <p>1 questions. So what is long-term use? 2 Q. Two of the three studies you mentioned 3 defined it as 20 or more years. 4 A. Yeah. But they ask different sets of 5 questions. One of them even asked questions about 6 -- if you look at the Sister Study questionnaire, it 7 asks about, during the ages of 10 to 13, how often 8 did you apply. And the options were "sometimes," 9 "frequently," "don't know." And then they had a 10 second about in the past 12 months. 11 In fact, they are incorrect in their 12 exposure classification because they say "more than 13 five times per month." If you look at Chang and the 14 original Sister Study, it was more than five times 15 per week, if I'm correct. 16 Q. The question was not about frequency. It 17 was about length of use. There is a frequency 18 number later, but let's focus on the length of use 19 number now. 20 A. Sure. 21 Q. Point estimate is 1.01. Do you believe 22 that shows an association? 23 A. I just don't -- I believe that analysis of 24 long-term use is flawed because of the way long-term 25 use data was collected. And I mean, for example,</p>

<p style="text-align: right;">Page 146</p> <p>1 let's look at Sister. Long-term use, perineal use 2 at age 10 to 13 years, last 12 months. What 3 happened to that whole -- 4 Q. You've made your opinion clear. I'm simply 5 asking whether you believe a 1.01 hazard ratio 6 represents an association. 7 A. Not in this context. 8 Q. Okay. Thank you. You'd agree that the 9 1.01 point estimate here is lower than the point 10 estimate for all users that we discussed earlier. 11 MS. PARFITT: Objection to form. 12 A. Which was one -- which one? The overall? 13 Q. The overall. 14 A. Yeah. It would be. I mean, you know, 15 you're selecting a subsample. You have wider 16 confidence intervals. You've lost a study already, 17 which didn't collect data, which was, you know, a 18 study that was driving the estimates. So I don't 19 see it as any -- I think it's more about how 20 exposure was defined and measured and -- 21 Q. Let's look at talc use for greater than one 22 week. What's the pooled estimate and confidence 23 interval there? 24 MS. PARFITT: I'm sorry. Where are you? 25 MR. MARTIN: I apologize. That's the</p>	<p style="text-align: right;">Page 148</p> <p>1 total number of applications is probably the best 2 number. 3 And we know from several studies -- 4 Penninkilampi, others -- that total number is a 5 better measure. Forget about the results. What is 6 a better measure? You can't separate use and 7 frequency. I mean, they have it. And even that, 8 they have mis-specified in how they have measured 9 it. 10 Q. Again, if you could just answer the 11 questions that I'm asking. Ms. Parfitt will have an 12 opportunity to ask you questions if you want to 13 clarify anything later. 14 You would agree that the long-term use 15 point estimate is lower among women with patent 16 reproductive tracts. 17 MS. PARFITT: Objection. Asked and 18 answered. 19 A. How is that lower? Is it 1.01 and 1? 20 Q. Yes. 21 A. I don't think that makes any material 22 difference, I mean. 23 Q. Okay. So Dr. O'Brien and colleagues did 24 not initially look at only medically confirmed 25 cases; is that correct?</p>
<p style="text-align: right;">Page 147</p> <p>1 end of the first half of Table 3. 2 A. Yeah. 1.09, .97 to 1.23. 3 Q. Let's look at the bottom half of the table, 4 which is women with patent reproductive tracts. 5 A. Sure. 6 Q. Again, let's look at long-term use. What 7 is the adjusted hazard ratio there? 8 A. 1. 9 Q. Okay. 10 A. .76 to 1.32. 11 Q. So there's no association reported there; 12 correct? 13 MS. PARFITT: Objection. Form. 14 A. Yeah. But the frequent users report an 15 association 1.19, 1.03 to 1.37. 16 Q. Correct. But the long-term users, there's 17 no association reported. 18 A. Yeah. 19 MS. PARFITT: Objection. 20 Q. That's a lower point estimate, again, than 21 the long-term users -- than "all women" long-term 22 users? 23 A. I mean, I think we are talking about dose, 24 you know. We have to talk about what is an 25 appropriate measure of dose. It is, you know --</p>	<p style="text-align: right;">Page 149</p> <p>1 A. Yeah. Show me the section. I have vague 2 recollection, but you have to point me out where. 3 Q. Well, I'll point you to Table 4, which is 4 on the next page, which is a subset of medically 5 confirmed cases. Do you see that? 6 A. Yes. 7 Q. Okay. Let's look at all medically 8 confirmed cases, ever use, top left column. What's 9 the hazard ratio there? 10 A. Hazard ratio -- I mean, if you want to just 11 have me read things, yes, it is 1.05, .96 to 1.16. 12 Q. Would you agree that -- do you believe a 13 1.05, 0.96 to 1.16 confidence interval demonstrates 14 an association? 15 MS. PARFITT: Objection. Asked and 16 answered. 17 A. Depends on the context. You know, we have 18 many associations, that, you know, maybe 5 percent 19 is a protective effect, you know, diets, fruits, 20 vegetables, you know, and even a 10 percent 21 increased risk is -- so it really depends on the 22 context of, you know, and what else do we know about 23 that. 24 Q. So a few moments ago, you said you didn't 25 think there was a material difference between 1.01</p>

<p style="text-align: right;">Page 150</p> <p>1 and 1.0.</p> <p>2 A. Yeah.</p> <p>3 Q. There may be a material difference between</p> <p>4 1.05 and 1.0. How do I know where you draw the line</p> <p>5 here?</p> <p>6 MS. PARFITT: Objection. Misstates the</p> <p>7 testimony.</p> <p>8 A. I'm not parsing out 1 and 2 and 3. I mean,</p> <p>9 that's not what I'm saying. I'm saying that to the</p> <p>10 -- in terms of a material difference, it is, like,</p> <p>11 what is the question you're trying to answer right</p> <p>12 there. And remember, there are different set of</p> <p>13 adjustments. So the sample size has changed.</p> <p>14 Obviously, the point estimates will change.</p> <p>15 Q. Okay.</p> <p>16 A. Exposure metrics have changed. You have</p> <p>17 "ever," "long-term," "frequent."</p> <p>18 Q. But you would agree with me that the hazard</p> <p>19 ratio among medically confirmed cases was attenuated</p> <p>20 from the 1.09 we talked about earlier.</p> <p>21 A. Yeah. Because --</p> <p>22 MS. PARFITT: Objection.</p> <p>23 A. -- the numbers of cases declined. Number</p> <p>24 of cases declined. So it went from already low,</p> <p>25 2,168, to now even lower, 1800 cases. Of course,</p>	<p style="text-align: right;">Page 152</p> <p>1 "limitations," so "The strengths of this study."</p> <p>2 A. That's 57.</p> <p>3 Q. You're correct, and I'm wrong. Thank you.</p> <p>4 Do you see where I intend to be?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. "The strengths of the study were</p> <p>7 long" -- excuse me -- "large sample size and long</p> <p>8 follow-up time." Do you agree that those are</p> <p>9 strengths of the study?</p> <p>10 A. I think as compared to the previous cohort</p> <p>11 studies, yes, but not sufficient enough to detect</p> <p>12 cancer like ovarian cancer related to talc. Yes,</p> <p>13 compared to the initial cohorts, they have increased</p> <p>14 the sample size.</p> <p>15 Q. Did you mention that in your expert report?</p> <p>16 A. I don't recall what I mentioned. But,</p> <p>17 yeah, I mean, I did talk about their -- I'll have to</p> <p>18 go and look at it.</p> <p>19 Q. Okay.</p> <p>20 A. Give me one second. I did not mention that</p> <p>21 specific strength. But I also mentioned that</p> <p>22 strengths are noted, they're less prone to recall</p> <p>23 and recall bias remains a concern. But I did not</p> <p>24 mention that specific strength.</p> <p>25 Q. Okay. Would you agree with me that one of</p>
<p style="text-align: right;">Page 151</p> <p>1 you know, these could be attenuated.</p> <p>2 Q. Why would a smaller number of cases reduce</p> <p>3 the hazard ratio?</p> <p>4 A. Because of power.</p> <p>5 Q. Okay. Power would increase the size of the</p> <p>6 confidence interval?</p> <p>7 A. And can lower the point estimates because</p> <p>8 you are unable to detect an association. Either</p> <p>9 way.</p> <p>10 Q. Okay. Could it also raise the point</p> <p>11 estimate?</p> <p>12 A. Lower power?</p> <p>13 Q. Yes.</p> <p>14 A. How would it raise the point estimate?</p> <p>15 Q. Is your testimony that it is impossible for</p> <p>16 lower power to raise the point estimate?</p> <p>17 MS. PARFITT: Objection. Asked and</p> <p>18 answered.</p> <p>19 A. If a study is statistically under power,</p> <p>20 what it does, it gives you a more imprecise</p> <p>21 confidence interval.</p> <p>22 Q. Let's look at the "discussion" section.</p> <p>23 Let's look at page 58.</p> <p>24 A. The reference?</p> <p>25 Q. This is the last paragraph before</p>	<p style="text-align: right;">Page 153</p> <p>1 your criticisms of the cohort studies that preceded</p> <p>2 O'Brien was insufficient statistical power?</p> <p>3 A. That is correct.</p> <p>4 Q. And another criticism was insufficient</p> <p>5 follow-up time.</p> <p>6 A. That is correct.</p> <p>7 Q. Okay. Let's look at page 50 of O'Brien.</p> <p>8 A. 58?</p> <p>9 Q. 50. I apologize.</p> <p>10 MS. PARFITT: Let us know if you need to</p> <p>11 take a break. Not in the middle of a question,</p> <p>12 though.</p> <p>13 Q. Do you see the last paragraph of the</p> <p>14 introduction -- last sentence of the introduction?</p> <p>15 A. Yeah.</p> <p>16 Q. "Incorporate additional data, including</p> <p>17 additional cases and longer follow-up time."</p> <p>18 A. Yes.</p> <p>19 Q. Do you know how many years of follow-up</p> <p>20 time were added for each of the underlying cohorts</p> <p>21 in the O'Brien 2020 data?</p> <p>22 A. I mean, not specifically. But I think</p> <p>23 Table 1 provides that, you know.</p> <p>24 Q. Yeah.</p> <p>25 A. If we can go there and talk about it.</p>

<p style="text-align: right;">Page 154</p> <p>1 MR. MARTIN: Can we take a break and</p> <p>2 then go there and talk about it? Off the record.</p> <p>3 (A break was taken)</p> <p>4 MR. MARTIN: Let's go back on the record</p> <p>5 and mark a new exhibit, which is your 2018 expert</p> <p>6 report.</p> <p>7 (2018 report of Sonal Singh, M.D.,</p> <p>8 M.P.H., Exhibit 18, marked)</p> <p>9 A. Back with O'Brien later?</p> <p>10 Q. We're going to go back and forth. So if</p> <p>11 you can keep O'Brien up, that would be great.</p> <p>12 A. Sure.</p> <p>13 MR. TISI: You mean old report, new</p> <p>14 report or --</p> <p>15 MR. MARTIN: Potentially all three. I'm</p> <p>16 sorry the table is so small.</p> <p>17 MR. TISI: No. It's okay. You had</p> <p>18 nothing to do with the table. I just wanted to make</p> <p>19 sure --</p> <p>20 MR. MARTIN: I did not, no.</p> <p>21 Q. Look at page 49 of your 2018 report.</p> <p>22 A. Yeah.</p> <p>23 Q. So this is the Women's Health Initiative</p> <p>24 study reported in Houghton. Do you see where you</p> <p>25 noted that the study had only 429 ovarian cancer</p>	<p style="text-align: right;">Page 156</p> <p>1 limited follow-up. And then even for WHI, if you</p> <p>2 look at the footnote to that table, they say that</p> <p>3 pool's baseline oophorectomies were not recorded.</p> <p>4 So we don't know what happened to women who</p> <p>5 got an oophorectomy after exposure and developed</p> <p>6 ovarian cancer so -- because they were not</p> <p>7 collecting data on ovarian cancer -- oophorectomy.</p> <p>8 Q. They were collecting data on ovarian</p> <p>9 cancer.</p> <p>10 A. Yeah. But some of these oophorectomies</p> <p>11 could be due to ovarian cancer. That is the same</p> <p>12 case with NHSII.</p> <p>13 Q. Okay.</p> <p>14 A. Because data were reported in two-year</p> <p>15 cycles, we did not sense for oophorectomy that</p> <p>16 occurred after 2013, whereas NHS and Sister did</p> <p>17 sense it.</p> <p>18 Q. So let's talk about NHSII. That's entirely</p> <p>19 new data reported for the first time in O'Brien.</p> <p>20 A. Yes.</p> <p>21 Q. Okay. And then NHSI, which you talked</p> <p>22 about in your initial report on pages 47 and 48 --</p> <p>23 A. Yes.</p> <p>24 Q. Okay. Initially, there were 307 cases of</p> <p>25 ovarian cancer.</p>
<p style="text-align: right;">Page 155</p> <p>1 cases?</p> <p>2 A. Yes.</p> <p>3 Q. Do you see at the beginning of the second</p> <p>4 paragraph on page 50 where you noted it as 12 --</p> <p>5 there were 12.4 mean years of follow-up?</p> <p>6 A. Where is that? I'm sorry.</p> <p>7 Q. The beginning of the first paragraph on</p> <p>8 page 50 of your 2018 report.</p> <p>9 A. Okay. 50. Right?</p> <p>10 Q. 50.</p> <p>11 A. Yeah.</p> <p>12 Q. Okay. So let's compare that to the nurses</p> <p>13 -- excuse me -- the Women's Health Initiative study</p> <p>14 in O'Brien Table 1.</p> <p>15 A. Sure.</p> <p>16 Q. Now, 659 cases and 17.4 average years of</p> <p>17 follow-up. Do you see that?</p> <p>18 A. That is correct.</p> <p>19 Q. Okay. So substantially more on both --</p> <p>20 substantially more cases and longer follow-up.</p> <p>21 A. Yes. The number of cases has increased.</p> <p>22 Follow-up has increased. But there is, you know,</p> <p>23 obviously -- if you only look at the Women's Health</p> <p>24 Initiatives, that's true.</p> <p>25 But NHS is, you know -- NHSII has very</p>	<p style="text-align: right;">Page 157</p> <p>1 A. Yeah.</p> <p>2 Q. And now there are 1,258.</p> <p>3 A. That is correct.</p> <p>4 Q. So about -- more than triple -- more than</p> <p>5 quadruple, actually.</p> <p>6 A. Yeah. That is correct. But we have to</p> <p>7 examine that. The analysis in that study, 2000,</p> <p>8 page 47 -- if you go to page 48, they report there</p> <p>9 was an increase -- all the analyses adjusted for</p> <p>10 tubal ligation. Now here, we have analysis which</p> <p>11 interact by, you know, age adjusted for -- after</p> <p>12 adjusting for co-variants.</p> <p>13 So tubal ligation, if you look at page 40</p> <p>14 in the first line, tubal ligation and parity were</p> <p>15 confounders in that analysis.</p> <p>16 MR. MARTIN: Let's go off the record.</p> <p>17 There's a knock at the door.</p> <p>18 (A break was taken)</p> <p>19 MR. MARTIN: Back on the record.</p> <p>20 Q. I believe I asked you about the increased</p> <p>21 sample size in the Nurses' Health Study reported in</p> <p>22 O'Brien. And you agreed that it was more than</p> <p>23 quadruple the size of the initial Nurses' Health</p> <p>24 Study in terms of cases.</p> <p>25 A. Yes. And I also pointed out the specific</p>

<p style="text-align: right;">Page 158</p> <p>1 issue that the first Nurses' Health Study adjusted 2 for the confounder of tubal ligation, whereas here, 3 now they have started to look at -- in fact, all the 4 three studies -- Sister and WHI also -- adjusted it 5 as a confounder. So now, you know, there's a 6 separate analysis. So it's something to note, that 7 when we are looking at these numbers, what are the 8 implications of that. 9 Q. Those numbers wouldn't -- the -- I'm trying 10 to get at the power of the study. Whether it 11 adjusted for tubal ligation would not address the 12 power of the study, would it? 13 MS. PARFITT: Objection. 14 A. It would. It would. Because -- why? 15 Because power also depends on confounders. Right? 16 Power is -- you're talking about unadjusted power 17 versus adjusted power. Powers is -- numbers is one 18 issue. But what are the other issues? 19 You know, we've talked about confounding 20 and recall bias. So power is just you -- obviously 21 -- number is one issue. The other is etiologic 22 follow-up time. For example, NHSII, you add this to 23 million-year follow-up time. I'm not sure any of it 24 has etiologic relevance. 3 .8 years of follow-up, 25 you present that to an ovarian cancer researcher and</p>	<p style="text-align: right;">Page 160</p> <p>1 increased follow-up time. 2 MS. PARFITT: Right. If you look at 3 page 16 of your report. 4 A. Yeah. So, I mean, not specifically for 5 each of the studies. But if you go to page 16, I do 6 talk about follow-up in the context of discussion of 7 these studies, not specifically in that section on 8 O'Brien. 9 But this is where I'm discussing in the 10 section on the Health Canada reports assessment of 11 these studies where they talk about follow-up time. 12 Only four years of follow-up -- the NHSII was added 13 to the O'Brien analysis, and only four years of 14 follow-up was added. 15 Q. When you're talking about these studies -- 16 when you're talking about the Gonzalez study in the 17 second paragraph under "cohort studies" -- 18 A. Sure. 19 Q. -- and you note a median of 6.6 years of 20 follow-up, that's the initial Gonzalez study; 21 correct? 22 A. That is true. 23 Q. Not the updated version, O'Brien? 24 A. No. 25 Q. Similarly, when you talk about Houghton in</p>
<p style="text-align: right;">Page 159</p> <p>1 -- it's not relevant. So it's not just the years. 2 It's -- the question is what is relevant years? 3 And I said, you know, NHS and WHI are 4 informative. NHSII is really not informative. I'm 5 not even sure why one would include a study of 6 limited follow-up in the same analysis. 7 Q. You mentioned earlier that you thought 8 NHSII was not a major contributor to the pooled 9 estimate. 10 A. Yes. 11 Q. Okay. 12 A. It isn't. 13 Q. Okay. Did you note the increased follow-up 14 time in these studies anywhere in your 2023 report? 15 A. Let me take a look. Please give me one 16 second. 17 MS. PARFITT: Can I direct him to pages? 18 MR. MARTIN: Yes. 19 MS. PARFITT: Page 16, you're talking 20 about your cohort studies, Doctor, if that helps 21 you, page 16. 22 THE WITNESS: No. 23 MS. PARFITT: I think the question was 24 follow-up time. Is that right? 25 MR. MARTIN: Whether you noted the</p>	<p style="text-align: right;">Page 161</p> <p>1 the next paragraph, 12.4 -- 2 A. That's the initial. And I think those are 3 the references cited there. 4 Q. Okay. Can we skip back to page 11 of your 5 report? 6 MS. PARFITT: '23 report? 7 MR. MARTIN: '23 report. 8 MS. PARFITT: Thank you. 9 Q. This gets back to what we were talking 10 about earlier about statistical significance in 11 P-values. It's the second-to-last paragraph of 12 page 11. "The authors interpreted an HR of 1.08 13 with a lower bound of 0.99 as being no evidence of 14 an association, which is inconsistent with the 15 American Statistical Association statement." 16 So I take it that you consider a 1.08 HR 17 with a lower bound of .99 to represent an 18 association? 19 A. Not only I do. They do, too, in their 20 subsequent -- you know, in the response to the 21 letter. They just state that this -- and I'm going 22 to read it -- 23 MS. PARFITT: "They," you mean? 24 A. Dr. O'Brien, et al. Obviously, I do but -- 25 Q. We're going to get to the responses to the</p>

<p style="text-align: right;">Page 162</p> <p>1 letter by both Dr. O'Brien as well as Drs. Cramer 2 and Harlow in a little bit. 3 My question is whether you consider an HR 4 of 1.08 to be a strong association. 5 MS. PARFITT: Objection. Form. 6 A. Yeah. So, again, I think of strength not, 7 you know -- and I know some people -- and I may have 8 used terms like "moderate" and "strong" in the past. 9 But, you know, "strong" is more in the appropriate 10 context. I mean, is it in the appropriate public 11 health context and for an individual patient? 12 If there is a preventable risk factors -- 13 for example, let's say reducing cancer by eating 14 fruits and vegetables -- 1.09 would be very strong. 15 Q. In terms of evaluating whether an observed 16 association is causal in the first instance, do you 17 consider a 1.08 hazard ratio to be strong? 18 MS. PARFITT: Objection. Form. 19 A. I wouldn't even -- I wouldn't even, you 20 know -- I don't -- I wouldn't say that that's what 21 -- I wouldn't start -- I would just interpret it in 22 the context of other data, you know. I can't look 23 at just one piece of information, 1.09. What's the 24 other context? Is there a biologic plausibility? 25 Is there dose response? I don't think you can look</p>	<p style="text-align: right;">Page 164</p> <p>1 population is different. We have -- you know, if 2 you look at NHSII and Sister Study, these are 3 younger -- you know, younger women. You know, some 4 of the recruitment was for oral contraceptive use. 5 Tubal ligation occurs at different ages. 6 Hysterectomy occurs at different ages. So the -- 7 where they impact hazard ratios, you know, you can't 8 compare one study to the other. 9 Q. Okay. So let's flip to page 11, the first 10 full sentence, "Other epidemiologic studies have 11 noted a significantly increased risk of ovarian 12 cancer with no tubal ligation compared to those with 13 tubal ligation." Would you agree that some studies 14 have noted the opposite of that? 15 A. That is correct. 16 Q. Let's turn back to page 52 of the O'Brien 17 study. When you get there, it's going to be the 18 final paragraph of page -- of the first column. 19 A. Is it, like, a text or -- 20 Q. Yes. It's text. It should start with the 21 words "Statistical tests." 22 A. The "results" section? 23 Q. No. It's right before the "results" 24 section. 25 A. Okay.</p>
<p style="text-align: right;">Page 163</p> <p>1 at association and say "Well, it's strong or not 2 strong" and consistency or inconsistency. 3 Q. Let's go back to page 10. This is your 4 discussion of the O'Brien subset involving women 5 with intact tubes. "However, they conducted a 6 prespecified analysis evaluating the risk of ovarian 7 cancer among women with patent reproductive tracts. 8 The analysis showed a statistically significant 9 excess risk for ever users and never users, even 10 after adjustment for various risk factors." 11 First of all, is access risk for ever users 12 and never users a typo there? 13 MS. PARFITT: Objection. Form. 14 A. Should be "versus." 15 Q. That's what I thought. 16 A. Yeah. "Versus never users." Yeah. 17 Q. How do you balance that result with the 18 result we talked about earlier from Cramer that 19 showed a higher odds ratio for women with a tubal 20 ligation or hysterectomy? 21 MS. PARFITT: Objection. Asked and 22 answered and covered in his 2018. But you may 23 answer. 24 A. Yeah. So, I mean, again, those are two 25 different populations. You know, Cramer's</p>	<p style="text-align: right;">Page 165</p> <p>1 Q. "Statistical tests were two-sided, and the 2 P-value of less than .05 was considered 3 statistically significant. Because of the potential 4 for Type 1 errors due to multiple comparisons, 5 finding from subgroup and sensitivity analyses 6 should be interpreted as exploratory. All analyses 7 were conducted in SAS9.4." 8 What do you -- can you explain the concept 9 of multiple comparison testing? 10 A. Sure. Multiple testing is if, you know, 11 you conduct a study and you have or -- somehow you 12 have different questions you're trying to answer and 13 you do more than one analysis or 10 analysis or 15 14 analysis or 20, then you may want to do a correction 15 for that. 16 Q. Is that because running more analyses 17 increases the possibility that one of them will 18 appear statistically significant by chance? 19 A. Yes. But in this case, the analysis that 20 -- was etiologically relevant and was prespecified 21 is not -- I know they talk about exploratory. But 22 they even emphasize importance -- and, again, I know 23 we're going to discuss in the letter -- is not 24 necessarily just a subgroup analysis. 25 Q. So let's actually turn to what you said,</p>

<p style="text-align: right;">Page 166</p> <p>1 the exploratory discussion, which is on page 56.</p> <p>2 A. Yeah.</p> <p>3 Q. It's the middle paragraph of the second</p> <p>4 column beginning "When restricted."</p> <p>5 A. So it's the second text; right?</p> <p>6 Q. Yes. It is text, but I actually may have</p> <p>7 the wrong place. I'm sorry. I guess I'm wrong. On</p> <p>8 page 56. It's in text.</p> <p>9 MS. PARFITT: I'm sorry, Zack. I'm not</p> <p>10 seeing it.</p> <p>11 MR. MARTIN: It's halfway through the</p> <p>12 first for -- the final paragraph of page 56.</p> <p>13 THE WITNESS: Give me a second.</p> <p>14 MR. MARTIN: Begins "In this analysis."</p> <p>15 MS. PARFITT: Do you have it now?</p> <p>16 THE WITNESS: Yeah. Yeah. I have it.</p> <p>17 Q. That sentence is what you mentioned</p> <p>18 earlier. Says "This finding should be considered</p> <p>19 only exploratory and hypothesis generating." That's</p> <p>20 referring to the finding among women with intact</p> <p>21 tubes; correct?</p> <p>22 A. Yeah. No. I'm not mentioning that. I'm</p> <p>23 going to her letter, page 2097, where she states --</p> <p>24 Dr. O'Brien states that "Therefore, even though we</p> <p>25 stated that findings from subgroup analysis should</p>	<p style="text-align: right;">Page 168</p> <p>1 And now we know that the mechanisms --</p> <p>2 these are the mechanisms of retrograde migration of</p> <p>3 talc. So these are prespecified exploratory. And I</p> <p>4 stress the word "prespecified" because they were</p> <p>5 looking for specific mechanism.</p> <p>6 Q. Just, again, to get a clear record on my</p> <p>7 question, you do not believe that you are using the</p> <p>8 subgroup analysis in an exploratory or hypothesis-</p> <p>9 generating way in your report.</p> <p>10 A. I mean, I think it is a causal -- I'm not</p> <p>11 using it as an exploratory. I'm using it as a</p> <p>12 causal, you know, hypothesis -- causal statement</p> <p>13 about talc and ovarian cancer. It's not</p> <p>14 exploratory.</p> <p>15 Q. Let's look back at your report, page 11.</p> <p>16 A. New report; right?</p> <p>17 Q. New report. I'm sorry. Yes.</p> <p>18 A. Yeah.</p> <p>19 Q. Two thirds of the way down, it says</p> <p>20 "Inability to assess tests for patency." "The</p> <p>21 authors acknowledged they did not perform tests for</p> <p>22 patency, so women reported as being patent in this</p> <p>23 analysis may not have patent reproductive tracts."</p> <p>24 That's a concern about misclassification; right?</p> <p>25 A. Give me a second. Okay.</p>
<p style="text-align: right;">Page 167</p> <p>1 be interpreted as exploratory, we do not consider</p> <p>2 them all equally important and agree that the</p> <p>3 positive association among women with patent tubes</p> <p>4 is consistent with the hypothesis that there's an</p> <p>5 association between genital powder use and ovarian</p> <p>6 cancer." That's in the letter that --</p> <p>7 Q. Correct.</p> <p>8 MS. PARFITT: Finish. That's in the</p> <p>9 letter that what?</p> <p>10 A. That she responded to Drs. Harlow and</p> <p>11 others who had pointed out that.</p> <p>12 Q. Do you believe that you are using the</p> <p>13 subgroup analysis for patent tubes in an exploratory</p> <p>14 and hypothesis-generating way?</p> <p>15 MS. PARFITT: Objection. Misstates his</p> <p>16 testimony.</p> <p>17 A. I am or she is?</p> <p>18 Q. Do you believe that you are in your expert</p> <p>19 report?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 A. No. I'm looking at etiologically relevant</p> <p>22 exposure. And as was done in the first three, you</p> <p>23 know -- if you look at NHSI and, you know, WHI and</p> <p>24 Sister, they were adjusting for these tubes. So</p> <p>25 they were considering them as confounders.</p>	<p style="text-align: right;">Page 169</p> <p>1 Q. Do you know how -- do you know how the data</p> <p>2 were collected with respect to women's patency in</p> <p>3 the underlying studies?</p> <p>4 A. Self-reported.</p> <p>5 Q. Self-reported. Do you believe most women</p> <p>6 know whether they have fallopian tubes or not --</p> <p>7 intact fallopian tubes or not?</p> <p>8 MS. PARFITT: Objection. Form. You can</p> <p>9 answer that.</p> <p>10 Q. If you don't know the answer, that's fine.</p> <p>11 A. I mean, women would know that. Yeah. But</p> <p>12 do they report it accurately? That's two different</p> <p>13 questions, you know. "Do they know it?" Is one</p> <p>14 thing. "Do they report it accurately?" It's two,</p> <p>15 you know -- two levels of questions.</p> <p>16 Q. Let's look at Gossett 2020. Are you</p> <p>17 familiar with this? This is an editorial that</p> <p>18 accompanied O'Brien in JAMA.</p> <p>19 A. Yes.</p> <p>20 MR. MARTIN: Okay. We'll mark this as</p> <p>21 an exhibit. Can we go off the record for less than</p> <p>22 a minute while I look at my notes.</p> <p>23 (A break was taken)</p> <p>24 MR. MARTIN: Back on the record. Let's</p> <p>25 mark this as Exhibit 19.</p>

<p style="text-align: right;">Page 170</p> <p>1 (2020 Dana R. Gossett, M.D. editorial, 2 Exhibit 19, marked) 3 Q. This is the Gossett editorial we were 4 talking about before the break. All right. Can we 5 look at the second page of the editorial, which is 6 page 30 of JAMA, first full paragraph? 7 Do you see the second sentence of that 8 paragraph, "It is not possible to equate a patent 9 reproductive tract with exposure and a nonpatent 10 reproductive tract with non-exposure"? 11 And they go on and explain that the reason 12 is because women who undergo tubal ligation or 13 hysterectomy and use powders in the genital area 14 cannot be assumed to have started using the product 15 only after their surgery. Do you agree with that, 16 generally? 17 A. Let me read it. Which part did you 18 mention? "Given this" -- second paragraph? 19 Q. I will just ask it as a general question. 20 Do you agree that women may undergo a tubal ligation 21 or hysterectomy after having already used talcum 22 powder? 23 A. Yes. 24 Q. So as a result, there may be women with 25 nonintact genital tracts who nevertheless have</p>	<p style="text-align: right;">Page 172</p> <p>1 elevated. So there's different ways to interpret 2 the subgroup analysis. 3 Q. Just to be clear -- 4 A. Sure. 5 Q. -- is what you're saying that it could be 6 that both groups are at risk, or it could be that 7 neither group is at risk? 8 A. No. I'm saying that they -- what they're 9 interpreting is, because there is no test for 10 interaction that's different, the hazard ratio, that 11 is statistically significantly higher for the 12 patent. And, you know, the hazard ratio for 13 nonpatent is lower and not significant. They are 14 interpreting -- this is overall conclusion, that 15 there is no demonstrable (verbatim). 16 My interpretation is it is entirely plausible 17 that the nonpatent subgroups' hazard ratios and, you 18 know, the hazard ratios in the patent are similar. 19 So I have a -- not completely -- yes, it is a 20 completely different interpretation. If there's no 21 difference, .99 -- the group in .99 is the same as 22 the group in the patent. 23 Q. Okay. And would you interpret from that 24 that both groups are at risk? 25 A. Yes. I mean, that's one plausible</p>
<p style="text-align: right;">Page 171</p> <p>1 exposure to talcum powder. 2 A. Yes. 3 Q. Because they had that exposure before they 4 had surgery. Okay. If we can go down to the 5 sentence starting "The fact that." 6 A. Yes. 7 Q. "The fact that there are no significant 8 differences in the HRs in the patent," parentheses, 9 "HR, 1.13, 1.01 to 1.26, and nonpatent subgroups, 10 .99, .86 to 1.5, confirms the overall conclusion 11 that there is no demonstrable statistically 12 significant association between the use of powder in 13 the genital area and ovarian cancer risk." Do you 14 agree with that statement? 15 A. I disagree because the authors in the 16 response to letters also disagree with that. And, 17 you know, one interpretation of their tests of 18 interaction would be that the nonpatent subgroups 19 also have an increased risk because there is no 20 difference. 21 So why are we assigning the patent to be 22 nonsignificant and saying that the nonpatent is 23 driving the results? But it could be, if there's no 24 difference between the two groups -- what it could 25 mean, that the nonpatent subgroups are also</p>	<p style="text-align: right;">Page 173</p> <p>1 interpretation. 2 Q. Okay. 3 A. I'm, you know -- I'm not saying that the 4 non -- but when you do tests for interaction, you 5 have to keep both plausible interpretations in mind. 6 Q. Is it also plausible that neither group is 7 at risk? 8 MS. PARFITT: Objection. Form. 9 A. I mean, we already know that the patent is 10 -- patent group was increased. It is plausible that 11 there are no differences between the groups. 12 The only -- the test for interaction only 13 tell us, because the numbers are so reduced, that 14 there are no differences. The question is now you 15 have to bring in your understanding of biology, 16 retrograde migration, other studies to interpret 17 this. You cannot just look at P of .15 and 18 interpret that. 19 How do we interpret this data? She's -- I 20 don't know he or she. But Dr. Gossett is providing 21 one interpretation. I'm bringing another 22 interpretation based on biology, based on other 23 studies, that it is entirely plausible -- I am, you 24 know -- I think the association between talcum 25 powder products and ovarian cancer in the patent</p>

<p style="text-align: right;">Page 174</p> <p>1 group is causal. It's also entirely plausible that</p> <p>2 the nonpatent groups have similar risks.</p> <p>3 Q. Is it plausible, or has it been</p> <p>4 established?</p> <p>5 MS. PARFITT: Objection. Asked and</p> <p>6 answered.</p> <p>7 A. It is plausible. I wouldn't say that for</p> <p>8 --</p> <p>9 Q. Okay.</p> <p>10 MR. TISI: For what? I'm sorry.</p> <p>11 Continue.</p> <p>12 A. I would say in this study the -- you know,</p> <p>13 they don't establish that the nonpatent subgroups</p> <p>14 are -- they do say that the overall risk is</p> <p>15 increased. They don't establish that for nonpatent.</p> <p>16 Q. Okay. The sentence that runs -- that</p> <p>17 begins the end of the first column and runs into the</p> <p>18 second column, "The subgroup analysis suggesting</p> <p>19 that women with intact reproductive tracts who used</p> <p>20 powder in the perineal area developed ovarian cancer</p> <p>21 more frequently than nonusers is below the effect</p> <p>22 size that epidemiologists generally consider</p> <p>23 important and should not be selectively highlighted</p> <p>24 by the statistically unsophisticated reader as</p> <p>25 evidence of a relationship."</p>	<p style="text-align: right;">Page 176</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 A. Give me one second to read this. No. I</p> <p>3 disagree with that.</p> <p>4 Q. Do you agree that there ever is an effect</p> <p>5 size below what an epidemiologist should consider</p> <p>6 important?</p> <p>7 MS. PARFITT: Objection. Form.</p> <p>8 A. Epidemiologists, you know, not only</p> <p>9 consider effect size, they need to consider bias,</p> <p>10 confounding, you know, possibility of power and</p> <p>11 sample size issues.</p> <p>12 So, I mean, effect size is just one aspect</p> <p>13 of causal assessment. But, you know, is it a .991?</p> <p>14 Is it a point -- is it 1.1? I don't have an opinion</p> <p>15 on that. But I have examples in my report of very</p> <p>16 small effect sizes -- I'm not going to be wedded to</p> <p>17 1.09 or 1.1 -- small effect sizes that are causal.</p> <p>18 Q. Can we look back at your report, page 11?</p> <p>19 MS. PARFITT: Just for the record,</p> <p>20 that's the '23 report?</p> <p>21 MR. MARTIN: The '23 report.</p> <p>22 MS. PARFITT: Thank you.</p> <p>23 MR. MARTIN: If I say "report" without</p> <p>24 qualification, I mean the 2023 report.</p> <p>25 MS. PARFITT: Thank you. Okay. page</p>
<p style="text-align: right;">Page 175</p> <p>1 A. I'm sorry. Where are you? First page?</p> <p>2 MS. PARFITT: Go to the next page.</p> <p>3 Q. This is the second page. It's the sentence</p> <p>4 that spans the end of the first --</p> <p>5 MS. PARFITT: Back. I'm sorry. If you</p> <p>6 don't mind.</p> <p>7 MR. MARTIN: No, please.</p> <p>8 THE WITNESS: Sorry. I misunderstood</p> <p>9 the directions.</p> <p>10 MS. PARFITT: No. No. No. You're</p> <p>11 right here. Right here. Starts here.</p> <p>12 THE WITNESS: Okay.</p> <p>13 MS. PARFITT: Then it goes up over here.</p> <p>14 THE WITNESS: Got it. Sorry.</p> <p>15 MS. PARFITT: Thank you.</p> <p>16 MR. MARTIN: No problem.</p> <p>17 Q. Do you agree --</p> <p>18 A. What is the question?</p> <p>19 Q. Do you agree that the effect size -- let me</p> <p>20 start that over.</p> <p>21 Do you agree that the difference between women</p> <p>22 with intact reproductive tracts and women who did</p> <p>23 not have intact reproductive tracts is below the</p> <p>24 effect size that epidemiologists generally consider</p> <p>25 important?</p>	<p style="text-align: right;">Page 177</p> <p>1 11?</p> <p>2 MR. MARTIN: Yes. "Limited statistical</p> <p>3 power."</p> <p>4 Q. "The number of cases of ovarian cancer in</p> <p>5 24 case control studies -- N equals 13,421 -- is</p> <p>6 more than sixfold higher than the number of cases of</p> <p>7 ovarian cancer reported by O'Brien, et al. -- N</p> <p>8 equals 2,168 -- demonstrating the limited power of</p> <p>9 cohort studies to detect a significant increase in</p> <p>10 risk of ovarian cancer."</p> <p>11 So your position is that the lack of power</p> <p>12 could be a reason that Dr. O'Brien's top-line</p> <p>13 results were not statistically significant?</p> <p>14 A. Yeah. And I'll explain it a little bit</p> <p>15 more. So power is one aspect. But why did she get</p> <p>16 their -- the numbers, she got more cancer -- there</p> <p>17 were more cancers in NHSI, more follow-up time.</p> <p>18 There were more cancers in NHSII and some follow-up</p> <p>19 time -- but that was etiologically irrelevant --</p> <p>20 then some more follow-up in WHI in follow-up time.</p> <p>21 But she did not get etiologically relevant</p> <p>22 exposure periods sufficient enough that, even though</p> <p>23 the person years was million, she had enough power</p> <p>24 to detect a, you know, significant risk.</p> <p>25 Q. What do you think is a sufficient --</p>

<p style="text-align: right;">Page 178</p> <p>1 MR. TISI: I'm sorry. He wasn't 2 finished. 3 Q. I'm sorry. Please finish. 4 A. I'm sorry. I would have had to calculate 5 that. Post hoc power calculations are not 6 appropriate now that we have results of the study. 7 Q. Do you recall citing in your initial report 8 an article by Narod, "Talc and ovarian cancer," 9 2016? 10 A. Yes. And I remember the numbers they 11 quoted about power. 12 Q. Great. So let's look back -- let's look at 13 your supplemental report, paragraph 7 or -- page 7, 14 which also sites Narod, first full sentence. 15 A. Give me a second. I'm not there. 16 Q. Are you there? 17 A. Yes. 18 Q. Narod, et al. estimate that upward of 19 200,000 women would have to be enrolled in a cohort 20 study to detect an effect size of 1.2. 21 A. Sure. 22 Q. Do you agree that more than 200,000 women 23 were included in the O'Brien study? 24 A. O'Brien is not a single cohort study. 25 O'Brien is a pooled analysis of four different</p>	<p style="text-align: right;">Page 180</p> <p>1 e.g., we will need to study upwards of 200,000 women 2 for ten years." 3 So the Narod article didn't just talk about 4 number of women. It also discussed follow-up time; 5 correct? 6 A. Where are you, just so that I know? 7 MS. PARFITT: Yeah. I've lost you, too, 8 Zack. I'm sorry. 9 MR. MARTIN: It's page 2. 10 MS. PARFITT: Got it. 11 MR. MARTIN: The first full paragraph. 12 MS. PARFITT: First full. 13 MR. MARTIN: I'm sorry. It's the final 14 sentence of that. Begins "In order to achieve." 15 MS. PARFITT: Right there. I was 16 looking at the second paragraph. I'm sorry. I'm 17 sorry. 18 Q. "In order it achieve statistical 19 significance in a prospective cohort study, we need 20 a much larger cohort, e.g., we will need a study of 21 upwards of 200,000 women for ten years." So Narod 22 did talk about follow-up time in addition to time; 23 correct? 24 A. Sure. 25 Q. Do you know the average follow-up time in</p>
<p style="text-align: right;">Page 179</p> <p>1 cohorts, each with different etiologically relevant 2 exposure period. 3 This assumes that these 2,000 (verbatim) -- 4 you know, you're following these -- it's just not a 5 number. Right? It's, like, how much follow-up time 6 you're going to have. Power is not just about a 7 cohort. It's, like, how much cancer you're going to 8 have or what duration of time you're going to follow 9 them up. Yes, it has more than 200,000. But it's 10 not a single cohort study. Didn't follow them for 11 enough time. 12 Q. Let's talk about length of time followed. 13 And let's talk about the Narod article, which I will 14 mark as Exhibit 20. 15 (2016 study by Steven A. Narod, 16 Exhibit 20, marked) 17 Q. Let's look at the first -- the last 18 sentence of the first full paragraph on page 2, "In 19 order to achieve." 20 A. Page 2, last sentence of the -- 21 Q. First full paragraph. 22 A. "Prospective observational studies"? 23 Q. "In order to achieve statistical 24 significance in a prospective observational 25 (verbatim) study, we need a much larger cohort,</p>	<p style="text-align: right;">Page 181</p> <p>1 the O'Brien pooled analysis? 2 A. Yeah. Exactly. So what you're doing in 3 O'Brien is you are adding etiologically irrelevant 4 follow-up time from NHSII and even short follow-up 5 in Sist to some of the relevant time. Obviously, 6 the time will look big, but you're not following the 7 cohorts for ten years. Where is Sist follow-up for 8 ten years? Where is NHSII follow-up for ten years 9 -- I'm sorry -- about NHSII. 10 Q. NHSI did have a follow-up of well over ten 11 years. 12 A. Yeah. I'm talking about NHSII. You're 13 adding time just to inflate the denominator, but you 14 don't have what they're asking for. And then it's 15 also a question of "Where did they come up with this 16 1.2?" That's just their, you know -- I mean, I cite 17 it. But they said "Well, say we want to estimate 18 this 1.2 risk." That's, you know -- somebody might 19 want to do 1.1. Others we've seen in case control, 20 they may be 1.3. So you may need, you know, 21 different numbers. So that's one. 22 The main thing is etiologically relevant 23 exposure. It's not just ten years of follow-up. 24 What kind of follow-up are you getting? If you add 25 NHSII follow-up, it's very early follow-up. So you</p>

<p style="text-align: right;">Page 182</p> <p>1 mish and mash early with late.</p> <p>2 Q. Again, you mentioned earlier today you</p> <p>3 don't believe the NHSII results influenced the</p> <p>4 pooled --</p> <p>5 A. It is a minor influence.</p> <p>6 Q. Minor influence.</p> <p>7 A. Yeah. Yeah.</p> <p>8 Q. Okay.</p> <p>9 A. But, you know, in the pooled hazard ratio,</p> <p>10 because the point estimates are .81, you know, it</p> <p>11 appears that there's a decrease. But most of it is</p> <p>12 because the follow-up time is limited.</p> <p>13 Q. You would agree that the average follow-up</p> <p>14 time across the cohorts pooled in O'Brien is greater</p> <p>15 than ten years.</p> <p>16 A. Yeah. But, you know, the question is "What</p> <p>17 -- is that follow-up time etiologically relevant?"</p> <p>18 Yes, based on the Narod article, they said if you</p> <p>19 want to detect 1.2, you would need 200,000 women.</p> <p>20 But did they follow these 200,000 women? And when</p> <p>21 they did the etiologically relevant -- that is the</p> <p>22 patent tract -- they saw it.</p> <p>23 See, the Narod article doesn't talk about</p> <p>24 any confounder adjustment. So you have to follow up</p> <p>25 the susceptible group for that period of time to see</p>	<p style="text-align: right;">Page 184</p> <p>1 meta-analyses in your report; right?</p> <p>2 A. Most of them were already discussed in the</p> <p>3 prior deposition. I mean, I'm happy to discuss</p> <p>4 this --</p> <p>5 Q. Not all of them, but yes.</p> <p>6 A. We can talk about it. I have to go to my</p> <p>7 report.</p> <p>8 MR. MARTIN: Can we go off the record</p> <p>9 very briefly?</p> <p>10 (A break was taken)</p> <p>11 MR. MARTIN: Back on the record.</p> <p>12 Q. We were discussing before the break your</p> <p>13 comment that none of the individual cohorts had more</p> <p>14 than -- had anywhere near 200,000 women; right?</p> <p>15 A. That's correct.</p> <p>16 Q. Okay. Let's look at limited statistical</p> <p>17 power in -- towards the bottom of page 11 of your</p> <p>18 2023 report.</p> <p>19 MS. PARFITT: I'm sorry, Zack. What</p> <p>20 page?</p> <p>21 MR. MARTIN: 11.</p> <p>22 MS. PARFITT: Thank you.</p> <p>23 Q. "The number of cases of ovarian cancer</p> <p>24 studies in 24 case control studies, N equals</p> <p>25 13,421." So in this case, with the case control</p>
<p style="text-align: right;">Page 183</p> <p>1 the risk.</p> <p>2 Q. So let's go back to your statement that the</p> <p>3 -- none of the individual cohorts evaluated 200,000</p> <p>4 women. Had you looked at -- did you look at</p> <p>5 individual cohorts because you do not believe that</p> <p>6 the various cohorts can be productively pooled?</p> <p>7 A. No. They can be pooled, and they did it.</p> <p>8 But you have to look at the limitations of such</p> <p>9 pooling.</p> <p>10 Q. Okay.</p> <p>11 A. They were pooled. I mean, there had been</p> <p>12 pooled case control studies as well. But when you</p> <p>13 harmonize data as -- we understood how they had to</p> <p>14 make some choices about exposure and duration and</p> <p>15 frequency, the similar thing about follow-up. They</p> <p>16 pooled it together. But they pooled etiologically</p> <p>17 irrelevant -- I use that term -- versus -- with</p> <p>18 relevant, you know, that ten-year time they're</p> <p>19 talking about. And that inflates denominator.</p> <p>20 Q. Well, I'm glad you mentioned case control</p> <p>21 studies because there are meta-analyses of case</p> <p>22 control studies that also combine different</p> <p>23 samples --</p> <p>24 A. Yeah.</p> <p>25 Q. -- correct? And you cite some of those</p>	<p style="text-align: right;">Page 185</p> <p>1 studies, you are pooling or adding together the</p> <p>2 different studies to come up with the sample size;</p> <p>3 right?</p> <p>4 A. No. So, again, I'm not making comment</p> <p>5 about sample size. I'm just saying there is a --</p> <p>6 the number of cases in the case control studies</p> <p>7 significantly exceeds the cases even with the</p> <p>8 largest pooled analysis. That's all.</p> <p>9 It's not -- power calculation for case</p> <p>10 control study is not the same as -- so what Narod</p> <p>11 points out is, in the context of cohort study, you</p> <p>12 start out with exposure and measure outcomes. When</p> <p>13 you do a power calculation -- in fact, that is the</p> <p>14 efficiency of case control studies -- is their power</p> <p>15 to detect associations between exposure such as talc</p> <p>16 and -- so the power calculation -- I'm not doing a</p> <p>17 power calculation. I'm just pointing out a</p> <p>18 statement of fact, that the number of cases is more.</p> <p>19 Q. My initial question was just whether the N</p> <p>20 equals 13,421 is pooling all 24 case control studies</p> <p>21 that you discuss there.</p> <p>22 A. Yeah. I mean, I have to look at which</p> <p>23 reference that is. Penninkilampi --</p> <p>24 Q. Penninkilampi?</p> <p>25 A. -- total, name of case, number. That's</p>

<p style="text-align: right;">Page 186</p> <p>1 all.</p> <p>2 Q. Does power increase linearly with sample</p> <p>3 size?</p> <p>4 A. Power is not only a function of, you know,</p> <p>5 sample size. It's a function of, A, which group are</p> <p>6 you talking about. Have you -- are you going to</p> <p>7 adjust for confounders? Are there strata that</p> <p>8 you're -- are etiologically relevant? So it's not</p> <p>9 just about sample size. Power is relevant to other</p> <p>10 kind of questions you set up.</p> <p>11 Q. To the extent sample size influences power,</p> <p>12 is that relationship linear?</p> <p>13 A. When you say "linear," what do you mean?</p> <p>14 Can you give an example?</p> <p>15 Q. Sure. Is a six-times-larger sample six</p> <p>16 times more powerful than a sample one sixth of the</p> <p>17 size?</p> <p>18 A. Six times more -- no. But case control</p> <p>19 studies are more powerful in terms of power in</p> <p>20 detecting association. I mean, that is irrespective</p> <p>21 of -- this number could have been only 3,000. It</p> <p>22 didn't have to be 13,000. This is just an</p> <p>23 observation of numbers.</p> <p>24 This is not about -- but the comment about</p> <p>25 power of case control studies is in the first report</p>	<p style="text-align: right;">Page 188</p> <p>1 A. Yeah.</p> <p>2 Q. Can we look at page 253?</p> <p>3 MS. PARFITT: If I can have a copy,</p> <p>4 please.</p> <p>5 THE WITNESS: Sorry.</p> <p>6 MS. PARFITT: No. It's okay.</p> <p>7 A. 253.</p> <p>8 Q. Can we look at the first paragraph of the</p> <p>9 second column beginning -- well, first of all, Berge</p> <p>10 2018 was a meta-analysis of the case controlled and</p> <p>11 cohort studies that were existing at that time; is</p> <p>12 that right?</p> <p>13 A. It's 2016; right?</p> <p>14 Q. 2018.</p> <p>15 MS. PARFITT: The bottom, 2018.</p> <p>16 A. Copyright but accepted 2016 was -- I'm just</p> <p>17 trying to -- I don't have a problem --</p> <p>18 Q. It's copyright 2018.</p> <p>19 A. Okay. That's fine.</p> <p>20 Q. But it was a -- but you are correct. It</p> <p>21 looks like it was accepted in 2016.</p> <p>22 A. Yeah.</p> <p>23 Q. So my question is this is a meta-analysis</p> <p>24 of the case control and cohort studies probably that</p> <p>25 were, as you said, existing as of 2016. Right?</p>
<p style="text-align: right;">Page 187</p> <p>1 when I talk about study designs. Case control</p> <p>2 studies are more powered to detect the associations.</p> <p>3 Q. Is a -- even holding constant the number of</p> <p>4 cases, in other words, is a case control study that</p> <p>5 has 2,000 cases of ovarian cancer more powerful than</p> <p>6 a cohort study with 2,000 cases of ovarian cancer?</p> <p>7 A. Again, you have to do confounding, bias,</p> <p>8 other things. But yes. I mean, you could -- in</p> <p>9 general, case control studies are more adequately</p> <p>10 powered, you know, holding other things constant.</p> <p>11 Q. And the increased power in case control</p> <p>12 studies is not only a function of the increased</p> <p>13 number of cases they generally have.</p> <p>14 A. No. Because they -- partly is a function</p> <p>15 of the fact that they already start out with cases.</p> <p>16 So they can, you know, recall exposure.</p> <p>17 Q. Do you recall citing a study by Berge, 2018</p> <p>18 in your initial report?</p> <p>19 A. Yes.</p> <p>20 MR. MARTIN: Can that be marked as</p> <p>21 Exhibit 21?</p> <p>22 (2018 article by Wera Berge, et al.,</p> <p>23 Exhibit 21, marked)</p> <p>24 Q. You're familiar with the Berge article,</p> <p>25 2018?</p>	<p style="text-align: right;">Page 189</p> <p>1 A. Sure.</p> <p>2 Q. Okay. And looking at that paragraph I was</p> <p>3 pointing to earlier, beginning with "It should be</p> <p>4 noted," "It should be noted that the cohort studies</p> <p>5 included in the meta-analysis comprised a total of</p> <p>6 429 cases of ovarian" -- "cases of ovarian cases,"</p> <p>7 which I assume is a typo.</p> <p>8 A. I'm sorry. Where are you?</p> <p>9 Q. Sure. Middle of the first paragraph?</p> <p>10 A. Got it.</p> <p>11 Q. "It should be noted that the cohort studies</p> <p>12 included in the meta-analysis comprised a total of</p> <p>13 429 cases of ovarian cancer (verbatim) exposed to</p> <p>14 genital talc and 943 unexposed cases. The</p> <p>15 statistical power of the meta-analysis of this" --</p> <p>16 "of these cohort studies to detect a RR of 1.25,</p> <p>17 similar to the result of the meta-analysis of the</p> <p>18 case controlled studies, was 0.99. Thus, low power</p> <p>19 of cohort studies cannot be invoked as explanation</p> <p>20 of the heterogeneity of the results." Do you</p> <p>21 disagree with that statement by --</p> <p>22 A. Let me read it first a little bit. I</p> <p>23 completely disagree with them. I think they are</p> <p>24 conflating two different issues. They are saying</p> <p>25 that there are 429 cases in the -- it should be</p>

<p style="text-align: right;">Page 190</p> <p>1 noted that cohort studies included in the 2 meta-analysis comprise a total of 400 cases and 940 3 unexposed cases. What is unexposed cases? Is it 4 controls? 5 Q. I believe they mean cases of ovarian cancer 6 who are not -- who are not exposed to talcum powder. 7 A. The statistical -- I'm just trying to 8 unpack what are they trying to say. The statistical 9 power of the meta-analysis to detect an RR similar 10 to the results of the meta-analysis -- okay. So 11 they are saying "We want to do a power calculation 12 for 1.25." Was .99? I don't know how they come up 13 with that number. 14 Q. But you have not done a formal power 15 calculation of this type of your own; right? 16 MS. PARFITT: Objection. Form. 17 A. I don't know -- I have to go back and look 18 at my previous report if I -- I know I talked about 19 power. I don't know if I did a power calculation. 20 Q. You did not do one in your 2023 report. 21 A. No. And the reason is post hoc power 22 calculations are, in fact, you know, frowned upon 23 and not statistically appropriate. Even in this 24 case, once they have completed the analysis, trying 25 to invoke power as an explanation for the</p>	<p style="text-align: right;">Page 192</p> <p>1 I've ever seen -- to tumor histology. Do you see 2 where I am? 3 A. Yes. Okay. 4 Q. Okay. 5 MS. PARFITT: Are you there? 6 THE WITNESS: Yes. I can see it. 7 Q. What's the effect estimate for mucinous 8 cancer? 9 A. .05 with wide confidence intervals, .85 to 10 1.29. Is that -- I mean, I'm looking at the rows 11 across. 12 Q. That's correct. That's what I see as well. 13 A. It's not very easy to. 14 Q. That's what I see as well. Do you consider 15 that to be data that supports an association between 16 mucinous cancer and talcum powder exposure? 17 MS. PARFITT: Objection. 18 A. You know, I've evaluated -- again, sort of 19 going back to my assessment of epithelial ovarian 20 cancer. I mean, here, there are data suggest -- 21 pointing out to increase endometrial. The numbers 22 when you go to mucinous are so low that it is not -- 23 you know, that the fact that they see only 1.05 is 24 reasonable. But my assessment is on epithelial 25 ovarian cancer, of which mucinous is a subtype.</p>
<p style="text-align: right;">Page 191</p> <p>1 calculation, as in, like, .99 -- "Oh, they have a 2 lot of power." No. It's a design issue. You begin 3 -- you start to think about power before you design 4 the study. 5 Q. So is your testimony that the statistical 6 analysis done in this Berge study is inappropriate? 7 MS. PARFITT: Objection. 8 A. It is flawed. It's methodologically flawed 9 because this power calculation is post hoc. 10 Q. Let's look at Exhibit 22, Taher, et al., 11 2019. 12 (2019 article by Mohamed Kadry Taher, et 13 al., Exhibit 22, marked) 14 Q. So you talk about Berge or -- excuse me. 15 You talk about Taher on page 5 of your 2023 16 report -- 17 A. Sure. 18 Q. -- Paragraph 2. 19 A. Let me get there. Yeah. 20 Q. You talk about the odds ratio and 21 confidence interval reported in this study. Let's 22 go and look at Table 2 of the Taher study, which is 23 all of page 93. 24 Let's go to Bullet 4 in that table -- which 25 candidly is not the most clear presentation of data</p>	<p style="text-align: right;">Page 193</p> <p>1 Q. So my next -- I'd like you to look at 2 clear-cell. You see the effect estimate there is 3 0.63 with a very wide confidence interval? 4 A. Yeah. But other studies have reported 5 elsewhere. You know, Terry's pooled analysis, you 6 know, provided an increased risk of -- yes. In this 7 analysis, they don't report it. But I'm not going 8 to disaggregate -- I mean, it is relevant that these 9 are different histologic subtypes of cancer. But my 10 causality assessment applies to epithelial ovarian 11 cancer. 12 Q. Did you say -- did you mention an article 13 that you think shows an association between clear- 14 cell cancer and talc specifically? 15 A. Terry. 16 Q. Terry. 17 A. Yeah. 18 Q. That's Terry 2013? 19 A. Yes. We can look it up. 20 MS. PARFITT: No. We talked quite a bit 21 about Terry in the last deposition. 22 Q. But just to, again, be clear, your analysis 23 is not broken down by histological subtype. 24 A. No. I'm just focusing on -- I'm pointing 25 out where data suggests this or that.</p>

<p style="text-align: right;">Page 194</p> <p>1 Q. Okay. Let's look at the "duration of use"</p> <p>2 bullet, which is about halfway up the page in the</p> <p>3 same --</p> <p>4 A. Table?</p> <p>5 Q. -- table.</p> <p>6 A. They have to do better tables.</p> <p>7 Q. Some lines would be helpful, really.</p> <p>8 A. Okay. Got it.</p> <p>9 Q. Okay. Do you see that 20-plus years</p> <p>10 produces the lowest point estimate and the only one</p> <p>11 that's not statistically significant?</p> <p>12 A. Yeah. But that's only one -- that's one</p> <p>13 aspect of exposure. We've discussed, I think, in</p> <p>14 the past report and -- that exposure is not just</p> <p>15 duration. It's intensity. It's frequency,</p> <p>16 application. And then if you extend to the Table 4,</p> <p>17 it provides several studies that provide --</p> <p>18 Table 3 -- sorry -- several studies that provide,</p> <p>19 you know, the right metric for those estimations,</p> <p>20 not all of them, you know. There are some studies</p> <p>21 that do not.</p> <p>22 But there are some studies that provide,</p> <p>23 based on the appropriate metric, such as Cramer,</p> <p>24 Harlow, Mills, Whitmore, Wu, and Schildkraut. I</p> <p>25 don't know how you spell that. It depends on the</p>	<p style="text-align: right;">Page 196</p> <p>1 A. Table 2 again?</p> <p>2 Q. No. I'm sorry. All the way back to</p> <p>3 page 91, Section 3.1. First sentence of the final</p> <p>4 paragraph, "63 percent -- N equals 19 -- of the</p> <p>5 studies concluded the presence of a positive</p> <p>6 association between perineal" --</p> <p>7 MS. PARFITT: Do you see that?</p> <p>8 THE WITNESS: Where is that?</p> <p>9 MS. PARFITT: Page 91. He's on the</p> <p>10 wrong page.</p> <p>11 THE WITNESS: I'm on the wrong page.</p> <p>12 MS. PARFITT: 91. Here at the bottom.</p> <p>13 63.</p> <p>14 THE WITNESS: Got it.</p> <p>15 Q. Do you see "63 percent -- N equals 19 -- of</p> <p>16 the studies concluded the presence of a positive</p> <p>17 association between perineal talc -- exposure to</p> <p>18 talc -- perineal exposure to talc powder and ovarian</p> <p>19 cancer risk. 10 studies concluded the absence of an</p> <p>20 association. Only one study could not reach a clear</p> <p>21 conclusion"? Do you believe that shows consistent</p> <p>22 literature?</p> <p>23 A. Yeah. To go to consistency, it's not just</p> <p>24 about "This study showed this," you know, showed a</p> <p>25 positive -- I mean, you'd have to actually read my</p>
<p style="text-align: right;">Page 195</p> <p>1 metric and the specific study.</p> <p>2 Q. Would you agree that, to the extent studies</p> <p>3 are able to estimate total lifetime applications,</p> <p>4 some of them demonstrate a dose response and some of</p> <p>5 them do not?</p> <p>6 MS. PARFITT: Objection. Form.</p> <p>7 A. I mean, I talked about in general, you</p> <p>8 know, the whole body of evidence in dose response.</p> <p>9 Some studies provide evidence of dose response.</p> <p>10 And, you know, I have to go back and look at the</p> <p>11 references in my previous report because that</p> <p>12 clearly outlines which is frequency, which is</p> <p>13 duration, which is frequency and duration. And, you</p> <p>14 know, you can bring it up, and we can go through</p> <p>15 study by study.</p> <p>16 Taher, what he does is he -- I presume --</p> <p>17 is he identifies five studies in the positive trend</p> <p>18 with frequency. Two studies suggested there might</p> <p>19 be an exposure response. Then there are other</p> <p>20 studies that did not.</p> <p>21 So there's, you know -- that's why in my</p> <p>22 causality assessment, you know, I provided that</p> <p>23 context in assessing dose response.</p> <p>24 Q. Let's look at -- let's go one page back or</p> <p>25 -- two pages back. I apologize. Three pages back.</p>	<p style="text-align: right;">Page 197</p> <p>1 section on consistency.</p> <p>2 Consistency is about, you know -- there's</p> <p>3 going to be different point estimates because</p> <p>4 different study designs and populations and whether</p> <p>5 it's case controlled or cohort, even within case</p> <p>6 controlled. But are there confidence intervals</p> <p>7 overlap? When they pool these estimates in the same</p> <p>8 Table 2, they don't find evidence of statistical</p> <p>9 heterogeneity, if you look at the I squares for case</p> <p>10 control or cohort.</p> <p>11 So consistency involves examining study</p> <p>12 design. What does Bradford Hill talk about?</p> <p>13 Person, place, and time. We have different persons</p> <p>14 conducting these studies in different parts of the</p> <p>15 world across several decades. We have no stat --</p> <p>16 not no but very minimal statistical heterogeneity</p> <p>17 and confidence intervals that overlap.</p> <p>18 So yes, I agree there's consistency in this</p> <p>19 literature. And actually, my opinion, there's</p> <p>20 strong evidence of consistency.</p> <p>21 Q. So let me ask you about little evidence of</p> <p>22 heterogeneity in the literature. Do you believe</p> <p>23 that there's little evidence of heterogeneity</p> <p>24 between the case control studies as a group and the</p> <p>25 cohort studies as a group?</p>

<p style="text-align: right;">Page 198</p> <p>1 A. You misconstrued what I said. Little 2 evidence? Statistical heterogeneity in the 3 meta-analysis and then a specific measure of that 4 known as I square. 5 And so if you look at the I squares at -- 6 in the hospital base or population base, usually, 7 you know, 50 to 70 percent are considered 8 significant. And all the meta-analysis never reach 9 that. So it's, like, 22 percent in the case 10 controls. And even Penninkilampi doesn't get there. 11 So that's an evidence of statistical, you 12 know -- lack of statistical heterogenic -- that 13 answer to the question that there's evidence of -- 14 there's evidence of consistency, despite differences 15 in point estimates, despite differences in study 16 design. So Penninkilampi, at least at that time, 17 had, you know, included those. 18 Q. When you look at the 22 percent I-squared 19 statistic for case control studies in Table 2 -- 20 A. Sure. 21 Q. -- do you understand that to be a statistic 22 referring to comparing case control studies to each 23 other or case control studies to other types of 24 study design? 25 A. No. Those are pooled estimates for the</p>	<p style="text-align: right;">Page 200</p> <p>1 in practice. 2 Then you have to look at risk of bias, look 3 at how that evidence is direct to your question, how 4 precise is it, is it a publication bias. And then 5 you can make a conclusion. 6 Usually, GRADE is -- just by the fact that 7 data here are observational, it assigns a low GRADE 8 to observational studies because it doesn't matter 9 in this context or any other. 10 It starts out with low for observational 11 studies. An observational study can only be 12 up-coded for, you know, directness or if there's a 13 confounder that actually bias them towards an 14 amount. 15 So yes, I'm very familiar with the GRADE 16 framework. Actually, there's a publication on GRADE 17 in my CV. 18 Q. If you look at 4.4, Section 4.4, which is 19 page 98 of this. 20 A. Section 4.4. Yeah. 21 Q. You can see that Taher did this GRADE 22 analysis here. 23 A. They did. 24 Q. And you agree they graded the evidence very 25 low?</p>
<p style="text-align: right;">Page 199</p> <p>1 case control studies. 2 Q. Okay. 3 A. Yeah. 4 Q. 22 percent number there doesn't address 5 heterogeneity between case control and cohort 6 studies; right? 7 A. No. And that we can look at in the 8 Penninkilampi meta-analysis. We should look at 9 that. 10 Q. That was published in 2018. And I think I 11 will get in trouble if I look at that. So let's -- 12 A. No. But there are other -- when you pool 13 them, you still don't reach that level of concern 14 about statistical heterogeneity. 15 Q. Let's look -- well, do you know what the 16 GRADE framework -- all capital letters -- is? 17 A. Yeah. I've written chapters for the -- 18 Q. Can you explain it to me? 19 A. GRADE frameworks is not one thing, you 20 know. GRADE framework is a way to provide, you 21 know, decision-makers evidence on use of 22 interventions that usually apply -- you know, you 23 have a body of evidence. You conducted a systematic 24 review. Now you want to make guidelines or some 25 other decisions about using that product or using it</p>	<p style="text-align: right;">Page 201</p> <p>1 A. Yes. Because they were looking at 2 observational data. But despite that, you know, 3 they rated the studies in that Table 2 we were 4 looking at as, you know -- between the high and low 5 risk of bias as, you know -- a lot of them as low 6 risk of bias, which provided an increase. 7 But here, they say that. But, you know, 8 they use the same data that -- when they go to the 9 full report -- which, you know, you'll probably 10 bring out some point in time -- they provide that 11 this data indicative of a causal association. 12 So GRADE is not necessarily a decision- 13 maker here. You know, GRADE is providing evidence 14 for decision-makers. But here, when we are making 15 causal determinations based on epidemiology -- which 16 is the only thing we have here. We're not going to 17 have trials. 18 Q. Well, let's look at what they say "very 19 low" means. In Footnote A to this Table 4, they 20 define "very low" as -- 21 A. Yeah. 22 Q. -- "We have very little confidence in the 23 effect estimate. The true effect is likely to be 24 substantially different from the estimate of 25 effect." Do you agree with that understanding of a</p>

<p style="text-align: right;">Page 202</p> <p>1 very low GRADE?</p> <p>2 A. No. I don't think so. And I don't think</p> <p>3 -- if that was what they had interpreted, then why</p> <p>4 would -- why wouldn't they have said that "We</p> <p>5 maintain our conclusion that talc is a possible</p> <p>6 cause of human cancer in humans based on the</p> <p>7 totality of evidence" and then gone on to write a</p> <p>8 report which says that "We are confident in our</p> <p>9 conclusion that there's a causal association" based</p> <p>10 off the same data?</p> <p>11 Q. So let's look at the -- what you just</p> <p>12 mentioned, which I believe is on the next page. I'm</p> <p>13 trying to --</p> <p>14 A. No. It's in the same -- up line -- second</p> <p>15 paragraph.</p> <p>16 Q. No. I'm looking at the following paragraph</p> <p>17 at the beginning of page 99 halfway through. I</p> <p>18 thought that's what you were --</p> <p>19 A. No, I'm not.</p> <p>20 Q. -- looking at as well because it says</p> <p>21 "Despite the very low certainty assigned by the</p> <p>22 GRADE evaluation, which heavily favors RCTs" --</p> <p>23 which you mentioned earlier, randomized control</p> <p>24 trials --</p> <p>25 A. Yeah.</p>	<p style="text-align: right;">Page 204</p> <p>1 -- I'm of the opinion that talc is, you know, causal</p> <p>2 and relates to the -- is a causal risk factor in the</p> <p>3 development of ovarian cancer.</p> <p>4 Q. Would you agree with me that that's a step</p> <p>5 further than the statement here in this paragraph?</p> <p>6 A. Yes. Which is the same statement they made</p> <p>7 in Health Canada. Yeah.</p> <p>8 Q. You would agree with me, also, that it's --</p> <p>9 that what -- the statement in this paragraph is</p> <p>10 consistent with IARC's classification of talc.</p> <p>11 A. Yeah. But that was in 2006. There was</p> <p>12 hardly any -- there were some studies at that time.</p> <p>13 But they didn't have all the data that they had or I</p> <p>14 have now.</p> <p>15 Q. I'm just trying to understand the meaning</p> <p>16 of "possible" here.</p> <p>17 A. Yeah. But remember, you know -- so let's</p> <p>18 unpack that a little bit. When you say "possible"</p> <p>19 and "probable" in that context -- IARC context --</p> <p>20 it's not the same as here, Taher. "Possible" and</p> <p>21 "probable" in the IARC context could mean Group 2B</p> <p>22 to Group 2A. We're not talking about that here.</p> <p>23 I mean, they don't even explicate are you</p> <p>24 talking about mechanistic data, are you talking</p> <p>25 about animal data, have you ruled out bias,</p>
<p style="text-align: right;">Page 203</p> <p>1 Q. -- "we maintain our conclusion that talc is</p> <p>2 a possible cause of human cancer in humans, based on</p> <p>3 a totality of the evidence." That's what I thought</p> <p>4 you were referring to earlier.</p> <p>5 A. I was. But then I also -- they use largely</p> <p>6 the same data. They update it in the Health Canada</p> <p>7 report and go further and say that "We are confident</p> <p>8 that there is indicative of a causal association."</p> <p>9 So I have done lots of grading myself. And I'm just</p> <p>10 trying to explain how it works.</p> <p>11 You know, most of the observational</p> <p>12 literature we do, we start out with low. And you</p> <p>13 are sort of stuck with the framework. It was really</p> <p>14 designed to assess interventions, like drug</p> <p>15 pharmaceutical trials and randomized control trials.</p> <p>16 It wasn't designed for this particular --</p> <p>17 Q. So I just want to focus on the "talc is a</p> <p>18 possible cause of human cancer" that you brought up</p> <p>19 here in this passage. Then we can talk about Health</p> <p>20 Canada.</p> <p>21 Is it your opinion that talc is a possible</p> <p>22 cause of human cancer, or is it your opinion that</p> <p>23 talc is a cause of human cancer?</p> <p>24 A. No. I'm just quoting the statement they</p> <p>25 state here, despite all the limitations. I believe</p>	<p style="text-align: right;">Page 205</p> <p>1 confounding. So you can't just use terms "possible"</p> <p>2 and "probable" in the same sentence and equate this</p> <p>3 to IARC.</p> <p>4 Q. Okay.</p> <p>5 A. IARC is different. And I've done the work</p> <p>6 for IARC too.</p> <p>7 Q. You mentioned Health Canada, which includes</p> <p>8 some of the same --</p> <p>9 A. Yeah.</p> <p>10 Q. -- scientists as this and, you suggested,</p> <p>11 reached a stronger conclusion about the</p> <p>12 carcinogenicity of talc than this article did?</p> <p>13 MS. PARFITT: Objection. Misstates the</p> <p>14 testimony and the evidence.</p> <p>15 A. I just -- my -- I'm just going to say what</p> <p>16 conclusion they read. You interpret it as stronger.</p> <p>17 They interpret it as confidently evidence of a</p> <p>18 causal -- indicative of a causal association.</p> <p>19 That's all I mean. It is strong.</p> <p>20 Q. So we may get to the Health Canada report</p> <p>21 later this afternoon, but I just want to ask you</p> <p>22 now. Do you know the standard of review which</p> <p>23 Health Canada uses under Canadian law?</p> <p>24 A. I mean --</p> <p>25 MS. PARFITT: Objection.</p>

<p style="text-align: right;">Page 206</p> <p>1 A. -- they are a regulatory body. I mean, I 2 don't know all the specifics of -- yeah. But, I 3 mean, they have a 350-page supplement. I was trying 4 to review it. They are very detailed, very 5 meticulous. I am very impressed with their work. 6 Q. Do you understand the standard applied in 7 regulatory law to be the same as the standard 8 applied in tort law? 9 MS. PARFITT: Objection. Form. 10 A. I mean -- 11 MS. PARFITT: He's not a lawyer. 12 Q. If the answer is you don't know, that's 13 fine. 14 A. I'm not a lawyer. I mean, I provide an 15 epidemiologic assessment on causation. I'm familiar 16 with IARC. I'm familiar with GRADE. You can ask me 17 all questions you want about how IARC comes to 18 probable and possible or, you know, sufficient 19 evidence. 20 The only thing I review is the details and 21 the methods and how did they come to that 22 conclusion. And they evaluate O'Brien. In fact, 23 several studies have been published after Health 24 Canada published their report. 25 Q. Are you familiar with Davis 2021?</p>	<p style="text-align: right;">Page 208</p> <p>1 plaintiffs' expert in this litigation? 2 A. Yeah. I skimmed through her deposition. 3 Q. We've asked this a couple of times. Did 4 that affect the way you evaluated the Davis paper in 5 your expert report? 6 MS. PARFITT: Objection. Asked and 7 answered. 8 A. You know, it's the same. I looked at the 9 methodology. I looked at disclosures. But, you 10 know, this is a, you know, consortium of 11 researchers, ovarian cancer -- they've published 12 many studies, not only these studies -- well-reputed 13 scientists, not just Dr. Moorman but others as well. 14 So, you know, it's not just her study. 15 Right? It's all these people. Schildkraut has 16 conducted many studies. So I have to look at the 17 methodology. 18 Q. You understand one of the purposes of this 19 study or the primary purpose of this study was to 20 examine talc use specifically in the African 21 American population; correct? 22 A. Yeah. 23 Q. Okay. And would you agree with me that 24 some studies show a greater use of talcum powder 25 among African American women than white women?</p>
<p style="text-align: right;">Page 207</p> <p>1 A. Yes. 2 MR. MARTIN: Okay. Let's mark this as 3 the next exhibit. 4 (2021 article by Colette P. Davis, et 5 al., Exhibit 23, marked) 6 Q. You talk about this in pages 8 and 9 of 7 your expert report, I believe. 8 A. Give me one second. Let me give it to 9 them. You said which page? 10 Q. I haven't said a page yet. 11 A. Okay. You said some page of your report. 12 Q. Yes. I'm sorry. It's -- I was just saying 13 you talk about Davis on pages 8 and 9 of your 14 report. 15 A. Okay. That's all. 16 Q. I believe. 17 MS. PARFITT: Do you have the Davis? 18 May I have one copy of that? 19 Q. So you see Dr. Moorman's name in the list 20 of authors on page 1660 of the Davis article? 21 A. Yeah. 22 Q. It's the list of authors. 23 A. Yeah. I didn't go through all the list, 24 but I see it now. Yes. 25 Q. Are you aware that Dr. Moorman is a</p>	<p style="text-align: right;">Page 209</p> <p>1 MS. PARFITT: Objection. Form. 2 A. That is correct. 3 Q. Can we turn to page 1663, first paragraph, 4 the sentence that begins "Across most study sites"? 5 A. 66? 6 Q. 63. 7 A. I'm sorry. 8 Q. "Across most study sites, AA cases and 9 controls had a higher prevalence of ever use, 10 frequent use, and long-term use of genital powder 11 than white cases and controls." 12 So would you agree with me that African 13 American women not only used talcum powder at a 14 higher rate but use it more frequently on average 15 and for longer term on average? 16 A. Based on this study, yes. 17 Q. Okay. Let's turn to Table 3. It's 1665. 18 It's the top of 1665. Okay. And the all-case point 19 estimate for African American women is 1.22 with a 20 confidence interval that crosses 1. Do you see 21 that? 22 A. Yes. 23 Q. You see that, among white women, it's 1.36, 24 a higher point estimate and statistically 25 significant confidence interval? Do you see that?</p>

<p style="text-align: right;">Page 210</p> <p>1 A. Give me -- yes.</p> <p>2 Q. Okay. Do you have a theory for why the</p> <p>3 risk would be lower among African American users,</p> <p>4 despite using the product more frequently and for a</p> <p>5 longer period of time?</p> <p>6 A. I don't think it's lower. It's -- those</p> <p>7 two estimates are -- the authors conclude that they</p> <p>8 are no different. The tests of interaction were not</p> <p>9 significant. The confidence intervals are not --</p> <p>10 you know, overlapping. So I don't think they are</p> <p>11 lower. I mean, those are -- the point estimates</p> <p>12 appear to be lower, but.</p> <p>13 Q. You mentioned the confidence intervals are</p> <p>14 overlapping, despite the fact that the point</p> <p>15 estimates are different.</p> <p>16 A. Are lower.</p> <p>17 Q. The point estimate for African American</p> <p>18 women is lower. When we were talking about the top-</p> <p>19 line results in O'Brien, you told me that it didn't</p> <p>20 matter that the confidence interval overlapped 1.0.</p> <p>21 So I'm just trying to understand --</p> <p>22 A. Sure.</p> <p>23 Q. -- when you look at point estimates and</p> <p>24 when you look at confidence intervals.</p> <p>25 A. I look at both. There's no, like,</p>	<p style="text-align: right;">Page 212</p> <p>1 interaction that is not significant.</p> <p>2 So you have two where they state that both</p> <p>3 are elevated and test of interaction was not</p> <p>4 significant. And there's, you know, there's a lot</p> <p>5 of overlap. They're the ones --</p> <p>6 Q. Can you point me to the test of</p> <p>7 interaction, please? I'm not seeing it.</p> <p>8 A. Yeah. So you go to the second paragraph of</p> <p>9 the results -- okay -- "Ever use of genital powder"</p> <p>10 -- in page 1663.</p> <p>11 Q. Yes.</p> <p>12 A. Second paragraph, ever use was associated</p> <p>13 with 32 percent higher risk. Then they provide a</p> <p>14 confidence interval. When stratified by race among</p> <p>15 -- the 36 percent among white women pooled also</p> <p>16 shows significant, and nonsignificant higher risk</p> <p>17 among African American women. So, you know, again,</p> <p>18 36, 22 (verbatim) but no evidence of heterogenic.</p> <p>19 So that is a test of interaction. That's what I'm</p> <p>20 basing -- it's not just confidence intervals.</p> <p>21 There's a test of interaction.</p> <p>22 Q. Is it your position that, when a point</p> <p>23 estimate is elevated and P equals 0.33, that does</p> <p>24 not show a difference?</p> <p>25 A. Where is P 0.33?</p>
<p style="text-align: right;">Page 211</p> <p>1 selective looking. It's, like, when you're trying</p> <p>2 to compare the confidence intervals to examine</p> <p>3 consistency. So it's not like you're making a</p> <p>4 statement about strength. It's more about "Are the</p> <p>5 two findings consistent?" And we should say what</p> <p>6 they stated. Give me a second, and let me see what</p> <p>7 they state about the results.</p> <p>8 In this study, ever use was associated with</p> <p>9 higher odds in both AA and white women. And the</p> <p>10 population was similar in those groups, was --</p> <p>11 that's it. So there's no difference between the two</p> <p>12 groups. No evidence of heterogeneity by race was</p> <p>13 observed.</p> <p>14 Q. What I'm struggling with is, if the white</p> <p>15 results and the African American results are</p> <p>16 consistent because their confidence intervals</p> <p>17 overlap, why wouldn't that mean that the O'Brien</p> <p>18 results are consistent with 1.0 because the</p> <p>19 confidence interval overlaps that? What's the</p> <p>20 difference?</p> <p>21 A. With whom?</p> <p>22 MS. PARFITT: Objection. Form.</p> <p>23 A. So the question is these -- I'm comparing</p> <p>24 two different studies. You know, not even -- two</p> <p>25 different analysis. And here, you have a test of</p>	<p style="text-align: right;">Page 213</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 Q. "No evidence of heterogeneity by race</p> <p>3 observed," parentheses, "P equals 0.33."</p> <p>4 A. Yeah. So that is their conclusion. It's</p> <p>5 not just my conclusion. There's no evidence of --</p> <p>6 that's a test of interaction, P-value. That's not a</p> <p>7 test -- that's not a stratum-specific P-value.</p> <p>8 That's, when they compare the two groups, what is</p> <p>9 the P-value? It's a stratum, you know. It's for</p> <p>10 the test.</p> <p>11 Q. Understood. Understood.</p> <p>12 A. And I do agree with the authors that</p> <p>13 there's no evidence of heterogeneity by race.</p> <p>14 Q. You pushed back strongly this morning on</p> <p>15 drawing a firm line at P equals 0.05; correct?</p> <p>16 A. Sure.</p> <p>17 Q. You do in your report as well.</p> <p>18 MS. PARFITT: Object to the form. You</p> <p>19 may continue.</p> <p>20 Q. At what P-value do you draw the line to say</p> <p>21 that two values are different from one another?</p> <p>22 A. So I wouldn't draw the line. I'm just, you</p> <p>23 know, interpreting what they said in terms of tests</p> <p>24 of interaction, which are notoriously underpowered.</p> <p>25 So even though they're underpowered, there are no</p>

<p style="text-align: right;">Page 214</p> <p>1 difference.</p> <p>2 I don't have a P-value which I can say</p> <p>3 that, you know -- and sometimes authors, you know --</p> <p>4 it depends on the context. You know, is a P of .051</p> <p>5 not significant or P of .049 not -- P-value is just</p> <p>6 a statement that the data you have, you know, is --</p> <p>7 the probability of having a data as a more extreme</p> <p>8 under the hypothesis being two. It has no direct</p> <p>9 relevance to clinical significance other than</p> <p>10 interpretation. You know, it's a statement of the</p> <p>11 null hypothesis.</p> <p>12 Q. Do you have to draw the line somewhere?</p> <p>13 A. Yeah. I mean, you have to draw the line in</p> <p>14 the context of what other data you have.</p> <p>15 Q. Can we turn to 1667? Last sentence of the</p> <p>16 article, "Furthermore, there was not a dose-response</p> <p>17 relationship between frequency or duration of</p> <p>18 genital powder use in ovarian cancer risk or any</p> <p>19 significant differences in association by</p> <p>20 histotype." Did you consider this in your dose</p> <p>21 response section of your report?</p> <p>22 A. Yeah. I mean, it's in the -- noted. I'll</p> <p>23 read it for you. There was no differences. I have</p> <p>24 the exact statement: "By frequency of" -- page 9 --</p> <p>25 "By frequency of genital powders" -- if you go to</p>	<p style="text-align: right;">Page 216</p> <p>1 A. Yeah.</p> <p>2 Q. "We observed no clear dose-response trends.</p> <p>3 In contrast, AACES" --</p> <p>4 MS. PARFITT: No. No. Read the whole</p> <p>5 sentence. Says "We observed no clear dose-response</p> <p>6 trends for frequency or" --</p> <p>7 Q. "Frequency or duration of genital powder</p> <p>8 use and ovarian cancer risk among AA women or white</p> <p>9 women. In contrast, AACES reported significant</p> <p>10 trends for both frequency -- less than 30 times per</p> <p>11 month," comma, "daily use, and duration, less than</p> <p>12 20 years, greater than or equal to 20 years of</p> <p>13 genital powder use respectively.</p> <p>14 "While different than AACES's, our results"</p> <p>15 -- meaning the no-dose-response results -- "are</p> <p>16 consistent with most prior studies that report no</p> <p>17 significant dose response association between</p> <p>18 genital powder use and ovarian cancer risk." Do you</p> <p>19 agree with Davis's summary of, quote, "most prior</p> <p>20 studies"?</p> <p>21 A. No. And you can go back to my previous</p> <p>22 testimony, cites the studies that have, cites the</p> <p>23 studies that don't. And when they say "most," you</p> <p>24 can look at the references. They have, you know, 21</p> <p>25 to 25. So that's five, you know -- five -- 21 --</p>
<p style="text-align: right;">Page 215</p> <p>1 page 9 of my report, it talks about "There was no</p> <p>2 difference in the association by frequency of</p> <p>3 genital powder use, although both reported an</p> <p>4 increased risk."</p> <p>5 Q. My question was about the section of your</p> <p>6 report where you discuss -- you know what? Strike</p> <p>7 that question.</p> <p>8 Can we move back to the previous column on</p> <p>9 the same page?</p> <p>10 A. I didn't finish answering the question.</p> <p>11 You asked me a question.</p> <p>12 Q. I'm sorry. I thought you were done.</p> <p>13 A. No. You asked me a question, "Did you</p> <p>14 discuss the data of no dose response relationship in</p> <p>15 your report?" And I want to point out page 9 of my</p> <p>16 report, second-to-last paragraph explicitly</p> <p>17 discusses that.</p> <p>18 Q. Okay. Thank you. If you move to the</p> <p>19 previous column on page 1667 of Davis. Right.</p> <p>20 First full paragraph, second paragraph -- and this</p> <p>21 is, again, talking about dose response. Do you see</p> <p>22 where it says "We observed"?</p> <p>23 A. Sorry. Second column?</p> <p>24 Q. First column, second paragraph, "We</p> <p>25 observed."</p>	<p style="text-align: right;">Page 217</p> <p>1 that's six studies.</p> <p>2 We already saw, in Taher, he presented data</p> <p>3 from seven studies. You know, five are consistent</p> <p>4 and then two suggest. So I don't know what</p> <p>5 interpretation they provide. But in their study,</p> <p>6 they did not find. And that, I have included in my</p> <p>7 report.</p> <p>8 Q. Yeah.</p> <p>9 A. And most importantly, they did not</p> <p>10 ascertain the duration and frequency -- the lifetime</p> <p>11 applications, which is appropriate way to address</p> <p>12 dose.</p> <p>13 Q. You would agree that some of the studies on</p> <p>14 which you relied for showing of dose response also</p> <p>15 do not ascertain --</p> <p>16 A. Yes.</p> <p>17 Q. -- the exact lifetime use.</p> <p>18 A. Yes.</p> <p>19 Q. Okay. Can we flip back to page 1663?</p> <p>20 A. Yes.</p> <p>21 Q. Second paragraph, "When restricted to" --</p> <p>22 in the middle of the paragraph. Do you see that?</p> <p>23 A. Give me a second. First column or second?</p> <p>24 Q. First column. Thank you.</p> <p>25 MR. TISI: Where are you?</p>

<p style="text-align: right;">Page 218</p> <p>1 MR. MARTIN: Page 1663, second 2 paragraph. 3 A. Yes. 4 Q. "When restricted to women with patent 5 reproductive tracts, the OR among all women was 6 1.27, 1.09 to 1.48. Among women without patent 7 reproductive tracts, the corresponding OR was 1.42, 8 1.17 to 1.72." Did you consider this study in your 9 evaluation of O'Brien's patent reproductive tract 10 data? 11 A. When you say "this study" and "that data," 12 I mean, you look at the P for heterogeneity. It's, 13 again, nonsignificant. So it is -- I'm going to go 14 to my section and see what I commented or not. 15 Yeah. I did not comment on that. 16 But when they did the stratum-specific 17 analysis, while they report a higher risk with -- 18 without tracts, again, they are not different. And 19 that actually goes to my counterargument for 20 Gossett, that it is entirely plausible that women 21 without patent tracts have risks similar to women 22 with patent tracts. That's what you're seeing here. 23 So yes, if we consider this, then -- 24 although these are not different. I don't think 25 they are different estimates. These are overlapping</p>	<p style="text-align: right;">Page 220</p> <p>1 "Tanha, et al. conducted an umbrella review of two 2 systematic reviews and reported that perineal talc 3 use was associated with a statistically significant 4 increase in ovarian cancer, OR 1.279" -- excuse 5 me -- "297, 95 percent CI, 1.242 to 1.355, P less 6 than .001. Without any evidence of statistical 7 heterogeneity among studies, I squared equals 0 8 percent." 9 Can we look at the Tanha study we just had 10 marked, page 14, Table 2. Let me know when you're 11 there. 12 So perineal talc in Table 2, it says "OR 13 1.297." And for that row, there's an I squared of 14 0.0. Says there's two studies. Then it says "RR 15 1.250, I squared 38.11," two studies. So would you 16 agree with me there's four total talc studies 17 included in the Tanha article? 18 A. Not really. I mean, I don't understand 19 when you say "RR." 20 Q. I count four? 21 A. Which are the four? 22 Q. No. 6 -- turning back to Table 1, page 3. 23 A. Okay. 24 Q. No. 6 is Penninkilampi. Do you see that? 25 A. Table 1 -- okay. Table 1. Yeah.</p>
<p style="text-align: right;">Page 219</p> <p>1 estimates. Test of interactions are not 2 significant, but interpretation could be that women 3 with patent and nonpatent have similar estimates. 4 Q. Let's look at Perez 2018. 5 THE WITNESS: If you have several 6 questions, I'll take a break. 7 MR. MARTIN: Yes. We can take a break 8 now. Off the record. 9 (A break was taken) 10 MR. MARTIN: Back on the record. Before 11 we went off the record, I shared with you a Perez 12 study but -- 13 THE WITNESS: I don't have it. 14 MR. MARTIN: -- we're not going to do 15 it. Instead, we're going to move on to Tanha 2021, 16 which I'd like to have marked in place of the 17 previous exhibit. 18 (2021 article by Kiarash Tanha, et al., 19 Exhibit 24, marked) 20 Q. This is cited in page 6 and 7 of your 21 supplemental expert report. 22 A. Yeah. It's a brief reference to that. 23 Q. Yeah. And what you say in your 24 supplemental -- I'm sorry. I really shouldn't -- 25 it's page 6 of your expert report, Paragraph 3.</p>	<p style="text-align: right;">Page 221</p> <p>1 Q. Then continuing in Table 1, No. 13, the 2 Berge talc use study. Do you see that? 3 A. Sure. 4 Q. Okay. And continuing in Table 1 -- I had 5 these marked in my previous copy. But on page 8, 6 No. 247, the Taher study of perineal talc use. 7 A. Yeah. 8 Q. Okay. And on page 5, No. 124, the 9 Huncharek study of cosmetic talc use. 10 A. Yeah. 11 Q. Okay. Now, turning back to -- so you'd 12 agree with me there are four talc studies included 13 in Table 1 here -- 14 A. Table 1, yeah. 15 Q. -- that we just went over. 16 A. Four meta-analysis. 17 Q. Yes. If we go back to Table 2, you see two 18 meta-analyses that reported odds ratios and two that 19 reported risk ratios. 20 A. I don't -- so that's the question I have. 21 Let's figure out which -- how could these meta- 22 analyses report risk ratios, because these are case 23 control studies. Let's find out which meta-analysis 24 reported -- let's bring out the four meta-analysis 25 and see if they reported risk ratios.</p>

<p style="text-align: right;">Page 222</p> <p>1 Q. This is the article you cited in your 2 expert report. I'm asking you if you know, based on 3 what you put in your expert report, what they're 4 citing here for the odds ratio and what they're 5 citing for the risk ratio. 6 A. Yeah. I'm aware of that. Yeah. And I 7 think odds ratio estimate is more appropriate when 8 that -- when the -- when you are pooling case 9 control studies and cohort studies. I mean, I don't 10 -- risk ratios are not appropriate -- not -- not 11 appropriate. 12 But odds ratios are more appropriate for 13 case control studies. And I'm -- I would have to go 14 back and look at those four citations because Taher, 15 I know, reports on odds ratios. Penninkilampi also 16 reports on odds ratio. Let's see. You know, let's 17 bring out the other two. You said Berge. And what 18 else was it? 19 MS. PARFITT: Huncharek. 20 Q. We're not going to do it for the sake of 21 time. 22 A. No. But you're right. 23 Q. I'm going to ask why you chose to include 24 the odds ratio but not the risk ratio in your expert 25 report.</p>	<p style="text-align: right;">Page 224</p> <p>1 you know, is this -- how would we know which studies 2 you're basing your opinion on. This is one review. 3 I found it and reported it. 4 Q. This is not -- this Tanha article is not 5 just about talc; right? 6 A. Yeah. There's other risk factors, multiple 7 -- in fact, talc is a small portion. 8 Q. Right. So can we look at the first 9 paragraph of the "discussion" section on page 10? 10 A. Page? 11 Q. 10. Can you just review that paragraph? 12 And then we'll break it down sentence by sentence, 13 but can you take a moment to read all of it first. 14 A. Yes. 15 Q. So the first thing they say is -- well, 16 they say "As regards nutritional factors, intake of 17 coffee, egg, and fat can significantly enhance the 18 risk of OC." Do you see that? 19 A. Yes. 20 Q. And then they say "Estrogen and 21 progesterone therapies are also associated with 22 elevated risk of OC. Several diseases, as well as 23 some genetic polymorphisms, can significantly 24 increase the risk of OC. And other factors, like 25 obesity, overweight, smoking, and the use of</p>
<p style="text-align: right;">Page 223</p> <p>1 A. Odds ratio is much more relevant for rare 2 outcome. I don't see any difference between the 3 two. I mean, it's still, you know, 1.25, still 4 significant. The estimates are -- I squared is 5 38.1, still not a concern when you think about 6 statistical heterogeneity. 7 So it doesn't make -- you know, both are 8 similar. I don't know how they would even estimate 9 risk ratios. Maybe those studies had. But then 10 what is -- because lot of, you know -- most of them 11 are case control studies. So they are using odds 12 ratios. 13 Q. So would you agree that all four of these 14 studies -- Penninkilampi, Berge, Huncharek, and 15 Taher -- were included individually either in your 16 2018 or 2023 report? 17 A. Yes. 18 Q. Okay. So what, if anything, does the Tanha 19 study add to what those studies already provided? 20 A. I'm just updating my review. I'm adding, 21 you know, whatever other people have evaluated. 22 It's a different study design. It's an umbrella 23 review. So they have looked at other reviews. 24 So, again, this is not -- this is not sort 25 of driving my -- as you asked, you know, that, okay,</p>	<p style="text-align: right;">Page 225</p> <p>1 perineal talc, are also accompanied by an increased 2 risk of OC." 3 A. That is correct. 4 Q. Do you see that, with regards to coffee, 5 eggs, and fat, they say "can significantly enhance 6 the risk," and with regards to "obesity, overweight, 7 smoking, and talc," they say "are also accompanied 8 by an increased risk"? 9 MS. PARFITT: You're referring now to 10 the very last sentence. 11 MR. MARTIN: Yes. Correct. 12 A. Yeah. Yeah. I did not disentangled 13 coffee, egg, or fat and get into the minutia of, you 14 know, significantly or not. I mean -- 15 Q. I'm sorry. I didn't want to cut you off. 16 A. Yeah. I just want to say that, you know, 17 this was an umbrella review relevant to the 18 question. Was just cited. As you can see, I 19 devoted two lines to it. 20 Q. So you don't have an opinion on whether 21 there's a difference in meaning between 22 "significantly enhanced the risk" and "accompanied 23 by an increased risk." 24 MS. PARFITT: Objection. Form. 25 A. First of all, you'd have to do a causal</p>

<p style="text-align: right;">Page 226</p> <p>1 analysis of coffee, ovarian cancer. I don't -- then 2 I would be worried about it. I'm drinking a lot of 3 coffee. So, I mean, that's a different, you know -- 4 you'd have to look at it. I don't know what the 5 results on coffee are. 6 Q. Well, that was my next question. You don't 7 have an opinion on eggs, coffee, or fat, do you? 8 A. No. Obesity, yes, but not on eggs, coffee, 9 and fat. 10 Q. And your opinion is obesity can increase 11 the risk of ovarian cancer. 12 A. That is correct. 13 Q. Let's look at page 15 of this study, final 14 paragraph before the conclusion, so the second 15 column, "The ovarian carcinogenesis mechanism of 16 perineal talc use has remained unclear." Do you 17 agree with that statement? 18 A. No. No. 19 Q. No. And why don't you agree with that 20 statement? 21 A. I mean, I think the evidence for that is 22 becoming much more, you know -- is as solid as 23 Health Canada says, and Dr. O'Brien states that in, 24 you know, in one of her articles, that there's, you 25 know -- talc is an insoluble particle and has --</p>	<p style="text-align: right;">Page 228</p> <p>1 Q. Okay. Want to look at what Health Canada 2 says specifically. Second to last -- well, first 3 full paragraph on page 19, second-to-last sentence, 4 "Studies specifically assessing potential movement 5 of talc particles through the human body were not 6 identified in the literature." 7 A. Where is this? 8 Q. Second-to-last sentence. 9 A. Page 19? 10 Q. Page 19, yes. 11 MS. PARFITT: Wait until you find it. 12 A. "Translocation," blah, blah, blah. Where 13 is that? 14 Q. It's about two thirds of the way through 15 the first full paragraph, "Studies specifically 16 assessing." 17 A. Yeah. Yeah. Got it. 18 Q. "Studies specifically assessing potential 19 movement of talc particles through the human body 20 were not identified in the literature." Are you 21 aware of any such studies that assess the movement 22 of talc particles through the human body? 23 A. Yes. Indirectly. I mean, and I note in 24 the, you know -- in my section on -- I mean, that -- 25 the fact that talc has been found in ovaries, talc</p>
<p style="text-align: right;">Page 227</p> <p>1 there's evidence of retrograde migration of talc. 2 And in animal studies, when applied, it can 3 cause epithelial reaction and trigger a chronic 4 inflammation which can lead to a series of mutagenic 5 changes and lead to carcinogenesis, which is further 6 aggravated if it contains asbestos. 7 Q. So you mentioned Health Canada. Let's take 8 a look at that. 9 A. Which number is that? 10 Q. I don't think we introduced it yet. I have 11 a marked-up version of Health Canada. Where is 12 that? 13 MS. PARFITT: Hold on. 14 (April 2021 Health Canada document, 15 Exhibit 25, marked) 16 Q. I gave you a version. Are you looking for 17 yours with notes? 18 A. Yeah. 19 Q. So because we were talking about 20 plausibility and migration, I want to turn to 21 page 19 of the Health Canada report. 22 In fact, you do, in your report, as well as 23 in your testimony here, rely on Health Canada for 24 the idea of retrograde migration; right? 25 A. Yes.</p>	<p style="text-align: right;">Page 229</p> <p>1 has been found in lymph nodes -- I mean, when you 2 say "study specifically is assessing," if you're 3 talking about study putting a peroneal talc and 4 going up the, you know, vagina, cervix, uterus, no, 5 there is no study like that in humans. 6 But there are studies which find talc in 7 ovarian tissues, talc in -- which provide indirect 8 evidence of retrograde migration of talc. And the 9 FDA concludes that they -- the findings that 10 potential particles do migrate is indisputable. 11 It's not just me. It's FDA, other researchers as 12 well, Dr. O'Brien as well. 13 Q. Well, you'd agree that there are animal 14 studies in which talc has not migrated to the 15 ovaries; correct? 16 A. Yeah. 17 MS. PARFITT: Objection. Form. 18 Q. Well, let's look specifically at paragraph 19 -- the following paragraph on page 19. You'd agree 20 that the Henderson study cited here introduced talc 21 into the cervical canal and did not find it in the 22 ovaries of rats; correct? 23 A. Which Henderson? 24 MS. PARFITT: '77, '79? 25 Q. Sorry. 1986. It's the one that's</p>

<p style="text-align: right;">Page 230</p> <p>1 discussed in Paragraph 19.</p> <p>2 A. Give me a second. This is an animal study,</p> <p>3 but it says talc particles were detected in ovaries</p> <p>4 of all rats that received intrauterine installation</p> <p>5 as well as rats that received intravaginal treatment</p> <p>6 -- I mean, all of this was discussed in biologic</p> <p>7 plausibility last time. And I'm happy to discuss</p> <p>8 it, but it seems like --</p> <p>9 Q. The only thing I want to establish, that</p> <p>10 you'd agree there are animal studies going both ways</p> <p>11 on this issue.</p> <p>12 A. Yes.</p> <p>13 MS. PARFITT: Objection. Asked and</p> <p>14 answered.</p> <p>15 Q. Just wanted to address that very briefly.</p> <p>16 We may return to Health Canada later today, but I</p> <p>17 just wanted to address the issue while we were on</p> <p>18 it. Now I want to turn to Woolen 2022.</p> <p>19 MS. PARFITT: Going to Woolen.</p> <p>20 MR. MARTIN: Can I introduce both Woolen</p> <p>21 as Exhibit 26 and a supplemental table to that as</p> <p>22 Exhibit 27?</p> <p>23 (2022 article by Sean A. Woolen, et al.,</p> <p>24 Exhibit 26, marked)</p> <p>25 (Supplementary table, Exhibit 27,</p>	<p style="text-align: right;">Page 232</p> <p>1 paper; right?</p> <p>2 MS. PARFITT: Objection.</p> <p>3 A. How do I know --</p> <p>4 MS. PARFITT: Form.</p> <p>5 A. -- if that is even correct? Like, that's</p> <p>6 not my, you know, determination. I'm looking at the</p> <p>7 paper disclosures. That's as much as I get into it.</p> <p>8 Q. Would you agree it's not disclosed in the</p> <p>9 paper?</p> <p>10 MS. PARFITT: Objection. Misstates the</p> <p>11 evidence in the case.</p> <p>12 A. If it occurred, it could have. I don't</p> <p>13 know if it occurred; right? I have not looked at</p> <p>14 her report or previous meta-analysis. I'm just</p> <p>15 looking at this published peer-reviewed manuscript,</p> <p>16 her disclosure, and her analysis.</p> <p>17 Q. You agree it doesn't say it in this</p> <p>18 publication.</p> <p>19 MS. PARFITT: Objection. Asked and</p> <p>20 answered.</p> <p>21 A. No, it doesn't.</p> <p>22 MS. PARFITT: He already answered the</p> <p>23 question. Move on.</p> <p>24 THE WITNESS: Move on.</p> <p>25 Q. You've never read Dr. Smith-Bindman's</p>
<p style="text-align: right;">Page 231</p> <p>1 marked)</p> <p>2 Q. So you discussed Woolen in Paragraph 1 on</p> <p>3 page 5, the first sentence of that page of your</p> <p>4 report, your 2023 report. "Woolen, et al. conducted</p> <p>5 a systematic review and meta-analysis of case</p> <p>6 control and cohort studies and examined the</p> <p>7 relationship between frequent perineal exposure to</p> <p>8 talcum powder, defined as multiple applications</p> <p>9 greater than or equal to two times per week, and the</p> <p>10 risk of ovarian cancer."</p> <p>11 Let's look at this study. Let's look first</p> <p>12 at the list of authors of this study. Woolen,</p> <p>13 Lazar, and Rebecca Smith-Bindman. Do you know that</p> <p>14 Dr. Smith-Bindman is an expert for plaintiffs in</p> <p>15 this litigation?</p> <p>16 A. That has been disclosed, yes.</p> <p>17 Q. Yes. And it is, in fact, listed in the</p> <p>18 conflict of interest at the end. Are you aware that</p> <p>19 this article grew out of a meta-analysis that she</p> <p>20 performed for this litigation?</p> <p>21 MS. PARFITT: Objection.</p> <p>22 A. I have no knowledge --</p> <p>23 MS. PARFITT: Misstates the evidence.</p> <p>24 A. -- of that meta-analysis.</p> <p>25 Q. You agree that that's not mentioned in this</p>	<p style="text-align: right;">Page 233</p> <p>1 litigation reports?</p> <p>2 A. No.</p> <p>3 Q. You never talked to her?</p> <p>4 A. I don't know her.</p> <p>5 Q. Okay. If this article grew out of</p> <p>6 litigation work, would that affect your view of its</p> <p>7 reliability?</p> <p>8 MS. PARFITT: Objection.</p> <p>9 A. I've already evaluated that. And the</p> <p>10 disclosure is a -- complete. We know that she's,</p> <p>11 you know, an expert. So, as this question has been</p> <p>12 answered several times, examine the methodology,</p> <p>13 acknowledge the funding sources, bias and do that</p> <p>14 for the same studies for, you know, Lynch and other</p> <p>15 interpretations and others.</p> <p>16 So it's not just you -- you know -- it's</p> <p>17 okay to -- I mean, I'm not saying it's -- as long as</p> <p>18 they're disclosed, it makes it easier for the reader</p> <p>19 to interpret the studies and understand. That's</p> <p>20 all. And I'm not sure what you mean by the term</p> <p>21 "grew out of litigation."</p> <p>22 Q. We don't have time to go through and</p> <p>23 compare this to Dr. Smith-Bindman's report. But</p> <p>24 let's look at the first line of the "background"</p> <p>25 section here. Let's look at the full "background"</p>

<p style="text-align: right;">Page 234</p> <p>1 section.</p> <p>2 A. "Introduction"?</p> <p>3 Q. No. "Background."</p> <p>4 A. In the abstract.</p> <p>5 Q. In the abstract.</p> <p>6 A. Okay.</p> <p>7 Q. Okay. "Risk of ovarian cancer in women</p> <p>8 with frequent perineal talcum powder product is not</p> <p>9 well understood." Do you agree with that as a</p> <p>10 starting point?</p> <p>11 MS. PARFITT: Objection.</p> <p>12 A. I mean, that is her context. There are</p> <p>13 studies prior to her that suggest that, you know --</p> <p>14 increased risk with frequent use, some. So I think</p> <p>15 the question is, like, you know -- I think it's a</p> <p>16 context to begin a review.</p> <p>17 Q. Okay. And then the final sentence of the</p> <p>18 "background," "The purpose of this study is to</p> <p>19 estimate the association between frequent -- at</p> <p>20 least two times per week -- perineal talcum powder</p> <p>21 use and ovarian cancer." Do you see that?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. Would you agree with me generally</p> <p>24 that the reliability of a meta-analysis is</p> <p>25 contingent on the selection of studies that it</p>	<p style="text-align: right;">Page 236</p> <p>1 contacted the authors -- actually went a step ahead</p> <p>2 -- and got the data to conduct their analysis.</p> <p>3 Q. I was trying to avoid a compound question.</p> <p>4 But the second question was they did include some of</p> <p>5 the data from O'Brien's study that came out of the</p> <p>6 Nurses' Health Study.</p> <p>7 MS. PARFITT: Objection to the</p> <p>8 characterization of O'Brien.</p> <p>9 A. They included the data that was relevant to</p> <p>10 the question at hand.</p> <p>11 Q. Which was some of the data reported in</p> <p>12 O'Brien.</p> <p>13 A. Yes.</p> <p>14 Q. Okay. Can we look at page 2529, Table 1?</p> <p>15 A. Table 1, yeah.</p> <p>16 Q. Okay. What are they doing in this table?</p> <p>17 A. They're providing an assessment of --</p> <p>18 Table 1; right?</p> <p>19 Q. Yes.</p> <p>20 A. Quality assessment. Yeah.</p> <p>21 Q. Okay. Using the Newcastle-Ottawa scale?</p> <p>22 A. Yes.</p> <p>23 Q. Is the Newcastle-Ottawa scale objective or</p> <p>24 subjective?</p> <p>25 A. I mean, any assessment is, you know -- is</p>
<p style="text-align: right;">Page 235</p> <p>1 includes?</p> <p>2 A. Why a meta-analysis? A pooled analysis</p> <p>3 like O'Brien's and any study is dependent on the</p> <p>4 data they decided to include, the analysis they set</p> <p>5 up, what was the primary hypothesis. So it's not</p> <p>6 really either -- Woolen and it's Penninkilampi and</p> <p>7 everybody.</p> <p>8 Q. The reason why a meta-analysis is because</p> <p>9 we happen to be looking at one right now. So you</p> <p>10 would agree it's true of meta-analyses, as well as</p> <p>11 other things.</p> <p>12 MS. PARFITT: Objection. Form.</p> <p>13 A. Yes.</p> <p>14 Q. Can we look at page 2527, the first full</p> <p>15 paragraph on the second column, "The four</p> <p>16 prospective."</p> <p>17 A. Yeah.</p> <p>18 Q. Can you just review that paragraph quickly?</p> <p>19 Then I'll ask you some questions.</p> <p>20 A. Yes.</p> <p>21 Q. So I think you may have noted this in your</p> <p>22 report, but they did not include the pooled analysis</p> <p>23 in O'Brien. But they did -- correct?</p> <p>24 A. Yeah. So they had an etiologic question</p> <p>25 about, you know, frequent use. And so they</p>	<p style="text-align: right;">Page 237</p> <p>1 susceptible to interpretation. But here, too,</p> <p>2 they've included studies that are, you know, low</p> <p>3 quality, medium quality, high quality. So</p> <p>4 obviously, anything is subject to interpretation.</p> <p>5 And we can go through the questions and say</p> <p>6 -- for example, the question on the Newcastle --</p> <p>7 I'll give you an example why it is subject to</p> <p>8 interpretation -- is adjusted for most reasonable</p> <p>9 confounder. So I could say "Well, age or parity."</p> <p>10 And someone else would say "No. I want age, parity,</p> <p>11 or oral contraceptive." So that's subject to</p> <p>12 interpretation.</p> <p>13 Q. Dr. Singh, I'd appreciate it. I'm just</p> <p>14 running short on time. I appreciate if you focus on</p> <p>15 the question asked.</p> <p>16 What study received the highest</p> <p>17 Newcastle-Ottawa score here?</p> <p>18 A. O'Brien.</p> <p>19 Q. Okay. Do you agree with the assessment of</p> <p>20 giving O'Brien a higher quality score than the case</p> <p>21 control studies?</p> <p>22 A. Yes.</p> <p>23 Q. Okay.</p> <p>24 A. And it also provides a significantly</p> <p>25 increased risk. Independent of the whole analysis,</p>

<p style="text-align: right;">Page 238</p> <p>1 it reports a 40 percent risk for these.</p> <p>2 Q. Again, we'll get to that. Again, I'd</p> <p>3 appreciate if you just answer the questions.</p> <p>4 The -- can you look back at the Taher</p> <p>5 article that we talked about earlier, Taher 2019?</p> <p>6 A. What's the number?</p> <p>7 MS. PARFITT: It's number 24.</p> <p>8 Q. When you get there, can you look at</p> <p>9 Table 1, which spans page 89 and 90?</p> <p>10 A. Table 2. Yeah.</p> <p>11 Q. Table 1 on page 90.</p> <p>12 A. Yeah.</p> <p>13 Q. Whittemore -- well, first of all, this</p> <p>14 table also evaluated studies using NOS. That stands</p> <p>15 for Newcastle-Ottawa score?</p> <p>16 A. Sure.</p> <p>17 Q. Look at Whittemore, which is maybe a third</p> <p>18 of the way down on page 90. What's the score there,</p> <p>19 the Newcastle-Ottawa score they give it?</p> <p>20 A. 4.</p> <p>21 Q. Let's flip back to the Woolen article. You</p> <p>22 can see they also GRADE the Whittemore article. Can</p> <p>23 you see what they gave it there?</p> <p>24 A. 7. Yeah.</p> <p>25 Q. Okay. Do you know why it was given such a</p>	<p style="text-align: right;">Page 240</p> <p>1 quality studies, which they've done. So yes, rating</p> <p>2 you can have -- I don't know if, you know, if I went</p> <p>3 through what Taher did, I don't know if I would</p> <p>4 exactly replicate their ratings. It may be 1 point</p> <p>5 above or 1 point below.</p> <p>6 Q. That was my next question. Have you</p> <p>7 attempted to grade the qualities of the studies on</p> <p>8 which you rely using the Newcastle-Ottawa scale?</p> <p>9 MS. PARFITT: Objection. That question</p> <p>10 was asked several hours ago, quantitative --</p> <p>11 A. No. I did not do a Newcastle qualitative</p> <p>12 because several of -- for example, if you go to</p> <p>13 Penninkilampi, they graded all the studies are high</p> <p>14 quality. So they didn't exclude any studies.</p> <p>15 Q. Let's move to Table 2.</p> <p>16 A. Of Taher --</p> <p>17 Q. Of Woolen. You can put Taher away. We can</p> <p>18 do that exercise for several more studies but --</p> <p>19 A. This is done?</p> <p>20 Q. Yes. We're done with that. Table 2,</p> <p>21 Footnote 5.</p> <p>22 A. Yeah.</p> <p>23 Q. So you see that Dr. O'Brien provided</p> <p>24 additional data that are included only in the</p> <p>25 supplementary tables; right?</p>
<p style="text-align: right;">Page 239</p> <p>1 higher rating in Woolen than the Taher article?</p> <p>2 MS. PARFITT: Objection. Form.</p> <p>3 A. I mean, they provide the reasons, you know,</p> <p>4 selection, comparatively, and outcome -- exposure;</p> <p>5 right? And that adds up to 7.</p> <p>6 Q. Okay. Can you look at Wu, the Newcastle-</p> <p>7 Ottawa score in that one in Woolen?</p> <p>8 A. Yes.</p> <p>9 Q. It's an 8?</p> <p>10 A. Yeah.</p> <p>11 Q. Can we flip back to Taher and --</p> <p>12 MS. PARFITT: Again, the page?</p> <p>13 MR. MARTIN: Page 90, again.</p> <p>14 Q. What did they give that same article?</p> <p>15 A. 7.</p> <p>16 Q. Okay.</p> <p>17 A. So, I mean, those ratings, as we discussed</p> <p>18 -- I was trying to explain -- and more important is</p> <p>19 the analysis, which excluded the low-quality</p> <p>20 studies, particularly Booth. And then even after</p> <p>21 they excluded Whittemore, their estimates did not</p> <p>22 change.</p> <p>23 So I think this issue of rating is</p> <p>24 important. But perhaps even more important is</p> <p>25 addressing what happens when you exclude the low-</p>	<p style="text-align: right;">Page 241</p> <p>1 MS. PARFITT: Let's read what it says.</p> <p>2 Let's read it into the record.</p> <p>3 Q. "O'Brien did not publish on daily exposure</p> <p>4 for the National Health study participants.</p> <p>5 However, these data were available, and O'Brien</p> <p>6 provided these data for inclusion. The entirety of</p> <p>7 these data were provided and are shared in the</p> <p>8 supplementary table. We include data on women with</p> <p>9 intact fallopian tubes to harmonize with other</p> <p>10 publications."</p> <p>11 MS. PARFITT: Thank you.</p> <p>12 Q. Can we look at Supplemental Table 1, which</p> <p>13 is in the next exhibit?</p> <p>14 A. Yes.</p> <p>15 Q. So you can see here that, as the footnote</p> <p>16 suggested, there are data for all women and data for</p> <p>17 women with patent fallopian tubes; right?</p> <p>18 A. That is correct.</p> <p>19 Q. Okay. In both cases, they're broken down</p> <p>20 into nonusers, less frequent users, and daily users;</p> <p>21 right?</p> <p>22 A. That is correct.</p> <p>23 Q. And so Woolen could have used the "daily</p> <p>24 user" category among all women, which would have had</p> <p>25 somewhere around 1200 ovarian cancer cases; right?</p>

<p style="text-align: right;">Page 242</p> <p>1 MS. PARFITT: Objection to form.</p> <p>2 A. Where is that number?</p> <p>3 Q. I'm adding 706 plus 302 plus 216.</p> <p>4 A. Yeah.</p> <p>5 Q. Instead, they used, as we discussed, the</p> <p>6 women with patent fallopian tubes; right?</p> <p>7 A. That's correct.</p> <p>8 Q. Okay. And both -- looking at daily users,</p> <p>9 you'd agree that the both crude and adjusted hazard</p> <p>10 ratios for daily users are higher among women with</p> <p>11 patent fallopian tubes; right?</p> <p>12 A. That is what O'Brien reported.</p> <p>13 Q. Okay. And so by using the women with</p> <p>14 patent fallop -- by using data only from women with</p> <p>15 patent fallopian tubes, Woolen used a number that</p> <p>16 was a higher risk ratio; right?</p> <p>17 MS. PARFITT: Objection to the form.</p> <p>18 Misstates what Woolen did.</p> <p>19 A. Yeah. I mean, they selected what, you</p> <p>20 know -- based on the question about frequency, they</p> <p>21 selected one of the ratios that they felt was</p> <p>22 etiologically relevant -- not felt, but --</p> <p>23 Q. They selected the higher of the two</p> <p>24 available odds ratios.</p> <p>25 MS. PARFITT: Objection. Misstates.</p>	<p style="text-align: right;">Page 244</p> <p>1 Q. We don't have time to read all the studies.</p> <p>2 Let's just strike that question.</p> <p>3 A. I didn't really understand that.</p> <p>4 Q. Okay. It was not meant to be critical. I</p> <p>5 was just trying to move on.</p> <p>6 A. I tried to understand it too.</p> <p>7 Q. So turning back to the Footnote No. 5 in</p> <p>8 Woolen that we read into the record a moment ago.</p> <p>9 "We include data on women with intact fallopian</p> <p>10 tubes to harmonize with other publications."</p> <p>11 Can we look at the "methodology" section of</p> <p>12 the abstract? And can you point me anywhere that</p> <p>13 references patency in the inclusion criteria?</p> <p>14 MS. PARFITT: And you're limiting him</p> <p>15 just to the abstract? There's a "methods" section</p> <p>16 on the next page as well.</p> <p>17 A. Give me one second. Let me just read it.</p> <p>18 Yeah. So, I mean, to answer your question, you'd</p> <p>19 have to go and look at the methods and publication</p> <p>20 of primary data reporting on multiple times -- I'm</p> <p>21 at "eligibility criteria and study selection,"</p> <p>22 second paragraph.</p> <p>23 Q. Yes.</p> <p>24 A. So their criteria were --</p> <p>25 MS. PARFITT: Go slowly. She's having a</p>
<p style="text-align: right;">Page 243</p> <p>1 A. That was what was available.</p> <p>2 Q. So the answer is yes?</p> <p>3 MS. PARFITT: Objection.</p> <p>4 A. They selected the data that was</p> <p>5 etiologically relevant to the question at hand.</p> <p>6 Q. It is the higher of the two odds ratios;</p> <p>7 correct?</p> <p>8 MS. PARFITT: Objection. He's answered</p> <p>9 the question. Please.</p> <p>10 Q. Let's look back at that table.</p> <p>11 A. Same table?</p> <p>12 Q. Same table.</p> <p>13 A. Yeah.</p> <p>14 Q. Let's look at less frequent users, hazard</p> <p>15 ratio for all women of 0.96 and a hazard ratio for</p> <p>16 patent tubes of 1.04. Do you see that? "Less</p> <p>17 frequent users"?</p> <p>18 A. Okay. Yeah.</p> <p>19 Q. Okay. You'd agree that, if the next</p> <p>20 category up was "daily users," some women in the</p> <p>21 "less frequent users" category would have met the</p> <p>22 greater-than-twice-a-week inclusion criteria?</p> <p>23 MS. PARFITT: Objection. Form.</p> <p>24 A. I don't -- I would have to go back and look</p> <p>25 at how they define this. Give me a second.</p>	<p style="text-align: right;">Page 245</p> <p>1 hard time.</p> <p>2 A. "Selection criteria included publication of</p> <p>3 primary data, reporting on multiple times per week</p> <p>4 -- greater than two times per week -- perineal</p> <p>5 exposure to talcum powder, including direct</p> <p>6 application to the perineum, application to</p> <p>7 underwear or sanitary napkins or on birth control</p> <p>8 devices like diaphragms, at risk for malignancy.</p> <p>9 "And studies were also selected for</p> <p>10 baseline quality, requiring a multi-value risk</p> <p>11 adjustment, study-size cancers, and defined</p> <p>12 researched methods."</p> <p>13 Q. Is there anything in what you just said</p> <p>14 that references patency or tubal ligation?</p> <p>15 A. But -- yeah. I mean, it doesn't explicitly</p> <p>16 mention that. But multi-value risk adjustment, you</p> <p>17 know -- it doesn't even explicitly mention parity.</p> <p>18 Doesn't mention oral contraception.</p> <p>19 When we do meta-analysis -- and I've done</p> <p>20 65 of them -- you have to explicate your inclusion,</p> <p>21 exclusion. All studies do not have the same</p> <p>22 confounders they control for. So their etiologic</p> <p>23 question was more than twice a week. And then once</p> <p>24 they found that data, they have to choose.</p> <p>25 Penninkilampi excluded many studies that,</p>

<p style="text-align: right;">Page 246</p> <p>1 you know, didn't meet the criteria or had different 2 ratios of adjustment. We wouldn't exclude 3 Penninkilampi just because all the studies did not 4 adjust for the same confounder. 5 Q. I'm asking what I think is a simple 6 question. Do you see anything in the inclusion 7 criteria related to patency or tubal ligation? 8 MS. PARFITT: Objection. He's answered 9 the question. 10 A. I see it because I see multi-value 11 adjustment as not explicitly but implicitly looking 12 at the risk factors and -- which includes patency 13 and hysterectomy. 14 Q. So do you know if the other studies other 15 than O'Brien that are included in this meta-analysis 16 were limited to women with intact genital tracts? 17 A. Let's discuss the studies. I went and 18 reviewed that. 19 Q. Okay. We don't have time -- 20 MS. PARFITT: Let him -- you asked a 21 question. Let him -- 22 A. I'll tell you which ones did, which ones 23 didn't. This goes to the -- again, the science is 24 evolving. Some of the newer studies -- for example, 25 Schildkraut did assess for patency. Cramer reported</p>	<p style="text-align: right;">Page 248</p> <p>1 you have specific questions. 2 Q. I appreciate that, and the reason I'm doing 3 that is -- 4 MR. MARTIN: Can we go off the record 5 again? 6 (A break was taken) 7 MR. MARTIN: All right. Before the 8 break, we were talking about Woolen and talking 9 about -- one of the studies that is included in the 10 Woolen meta-analysis is a 2008 study by Wu, et al. 11 So I'd like to mark that as the next exhibit. 12 (2008 article by Anna H. Wu, et al., 13 Exhibit 28, marked) 14 Q. Let's look at Table 2, which is on 15 page 1411. 16 A. Yes. 17 Q. And you can see that frequency and duration 18 of talc use is broken down into several categories. 19 A. Sure. 20 Q. The first is -- well, the first is less 21 than 20 years -- excuse me -- less than or equal to 22 20 years and less than or equal to 10 times a month. 23 We'd all agree that that does not qualify for the 24 selection criteria in Woolen; right? 25 A. That is correct.</p>
<p style="text-align: right;">Page 247</p> <p>1 data by patency. Some of the older studies did not. 2 So, first of all, they have to find the 3 etiologically relevant exposure category. Then if 4 that study reported data adjusting for patency, they 5 harmonize. If they can't harmonize based on 6 patency, the primary question is exposure category. 7 Q. So, again, the answer to the question is 8 that no, not all of the case control designs were 9 limited to women with patent reproductive tracts? 10 MS. PARFITT: Objection. 11 A. Yeah. That is correct. Some studies did 12 not adjust for it, especially the earlier studies 13 did not. But even excluding those earlier, low- 14 quality studies, the ratios are similar. 15 Q. Again, the answer was yes? 16 A. Yes. But because the -- that is typical of 17 a meta-analysis; not all studies will have the same 18 multi-value adjustment. 19 Q. One of the studies they look at is Wu; 20 correct? 21 A. That is correct. 22 Q. Okay. And this study is also individually 23 on your reliance list; right? 24 A. I think I discussed this last time, but I 25 probably may have -- I mean, we can look at it, if</p>	<p style="text-align: right;">Page 249</p> <p>1 Q. Okay. The next one is less than or equal 2 to 20 years and between 10 and 30 times a month. 3 A. So it would be twice a week and -- 4 Q. Does that qualify for the selection 5 criteria in Woolen? 6 A. It's one of the estimates that qualify. 7 There are others. 8 Q. Let's go to the -- what is the RR for that 9 one? 10 A. 16 -- 1.16 and 0.63 and 2.12. 11 Q. So there are others. Let's go to the next 12 one, less than 20 years and greater than 30 times a 13 month. That qualifies as well; right? 14 A. That is correct. 15 Q. And next one doesn't qualify -- right -- 16 greater than 20 years but less than or equal to 10 17 times a month? 18 A. That is correct. 19 Q. Greater than 20 years and between 10 and 30 20 times a month? 21 A. That is correct. 22 Q. Does that qualify? 23 A. Which one? Second-to-last; right? 24 Q. Second to last. 25 A. Greater than 20 years, greater than ten --</p>

<p style="text-align: right;">Page 250</p> <p>1 yes. If it is greater than 10, yes.</p> <p>2 Q. What's the risk ratio for that one?</p> <p>3 A. 1.57, .99 to 2.5.</p> <p>4 Q. In the final category here, greater than 20</p> <p>5 years and greater than 30 times a month, that one</p> <p>6 qualifies?</p> <p>7 A. That is correct.</p> <p>8 Q. Okay.</p> <p>9 A. And that is the one they selected.</p> <p>10 Q. You've preempted several of my questions,</p> <p>11 but yes. The -- and that is the only one in which</p> <p>12 the confidence interval does not cross 1 of the</p> <p>13 various categories here. Do you agree with that?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. And that is the only one that Woolen</p> <p>16 selected; correct?</p> <p>17 A. Yeah. And again, you know, this goes back</p> <p>18 to the question. What is the question at hand?</p> <p>19 Because meta-analysis -- Woolen, me, others,</p> <p>20 Penninkilampi -- we have to make analytic choices.</p> <p>21 When they say twice, you know -- more than twice a</p> <p>22 week, that is a -- they are looking at any -- my</p> <p>23 understanding is they are looking at any etiologic</p> <p>24 relevant human exposure levels. So that's one.</p> <p>25 The second point is -- and I'll -- let me</p>	<p style="text-align: right;">Page 252</p> <p>1 still will only be slightly attenuated.</p> <p>2 Q. Let's unpack that a little bit. So first</p> <p>3 of all, you'd agree with me they could have included</p> <p>4 all four estimates that met their inclusion</p> <p>5 criteria?</p> <p>6 MS. PARFITT: Objection. Misstates the</p> <p>7 testimony.</p> <p>8 A. How could they have included all four? I</p> <p>9 don't understand. Just because there are four</p> <p>10 categories? Is that the understanding?</p> <p>11 Q. Well, each of those categories represents a</p> <p>12 different set of women; correct?</p> <p>13 A. No.</p> <p>14 MS. PARFITT: Objection. Form.</p> <p>15 A. You cannot -- I'll explain why. Let me</p> <p>16 explain. Yeah. I mean, if they wanted, they could</p> <p>17 have, you know, done analysis by each category. But</p> <p>18 you never -- you would never include, like, Wu A, B,</p> <p>19 C, D, four different categories in one analysis</p> <p>20 because there is correlation, you know. All these</p> <p>21 studies are -- data are coming from the same</p> <p>22 analysis. You can't pool them together.</p> <p>23 You have to select -- so they could have</p> <p>24 done -- and we've talked that -- say 1.57 is</p> <p>25 relevant. They could have done that. But my answer</p>
<p style="text-align: right;">Page 251</p> <p>1 explain this. So, yes, these are eligible. They</p> <p>2 select one. The second is, even, you know, if you</p> <p>3 look at their meta-analysis forest plot, you will</p> <p>4 see that the boxes for Woolen are -- the confidence</p> <p>5 intervals are Y. It's a very small black box. The</p> <p>6 biggest boxes are for NHS 2020 and Cramer.</p> <p>7 So what -- again, that goes to the issue:</p> <p>8 What is driving the estimates? It's Cramer and</p> <p>9 O'Brien. So if -- even if they had selected, you</p> <p>10 know -- say they selected a category, 1.57, this</p> <p>11 would have only a minimal influence on their</p> <p>12 meta-analytic estimate. And they further went ahead</p> <p>13 and excluded Wu -- Wu, which they note in their --</p> <p>14 you know, in the results, when excluding Wu, et al.,</p> <p>15 which combined perineal administration of talc with</p> <p>16 other methods, the summary pool ratio was 1.44, 95</p> <p>17 percent CI, 29 -- 1.29 to 1.6.</p> <p>18 So what this means is all analysts have to</p> <p>19 make a choice. When I do a meta-analysis, I'm</p> <p>20 comparing X drug to B. Sometimes there will be two</p> <p>21 arms. I have to make a choice. And they made --</p> <p>22 you're right. They selected the highest dose. But</p> <p>23 that was etiologically relevant to human exposure.</p> <p>24 And Wu is not contributing significant weight to</p> <p>25 this analysis. Even if they chose -- went down, it</p>	<p style="text-align: right;">Page 253</p> <p>1 is that it wouldn't have -- they couldn't have</p> <p>2 pooled all of them in that same analysis.</p> <p>3 Q. Let's turn back to Wu -- to Table 2 in Wu.</p> <p>4 A. Sure.</p> <p>5 Q. And let's take, for example, the two</p> <p>6 qualifying subsets for greater than 20 years.</p> <p>7 A. Yeah.</p> <p>8 Q. You see that? So the first one has 51</p> <p>9 cases, 43 controls. Second one has 67 cases and 45</p> <p>10 controls. They couldn't have pooled those two</p> <p>11 numbers together and done 117 cases and 98 controls?</p> <p>12 A. No. The reason is -- if you go to the</p> <p>13 footnote -- one adjusted for race, ethnic -- so</p> <p>14 these are the hazard ratios or adjusted hazard</p> <p>15 ratios.</p> <p>16 So, you know, within a study, if -- you try</p> <p>17 to pool, you know, your sort of correlated data.</p> <p>18 Across studies, you can pool from -- but within that</p> <p>19 study what could have, you know -- one approach</p> <p>20 would have been look at different categories of</p> <p>21 exposure, you know, in the main meta-analysis, not</p> <p>22 pool these two categories together in that main</p> <p>23 meta-analysis.</p> <p>24 Q. They could have asked Dr. Wu for the</p> <p>25 underlying data.</p>

<p style="text-align: right;">Page 254</p> <p>1 MS. PARFITT: Objection. Form.</p> <p>2 A. I don't -- yeah.</p> <p>3 Q. Could they have asked Dr. Wu for the</p> <p>4 underlying data?</p> <p>5 MS. PARFITT: Objection. Form.</p> <p>6 A. I mean, I don't know if that was the</p> <p>7 approach they took. They were approaching it one</p> <p>8 study. They want to look at one exposure category.</p> <p>9 I don't think they were trying to disaggregate</p> <p>10 exposure categories.</p> <p>11 Q. Well, they did ask Dr. O'Brien for her</p> <p>12 underlying data.</p> <p>13 A. Yeah. Because -- they asked her because</p> <p>14 she did not report it. Did not report it by that</p> <p>15 exposure category. Here, they already reported.</p> <p>16 They chose one. If they had gone one step further</p> <p>17 and said "I'm not sure that Dr. Wu would have" --</p> <p>18 they would have to give primary data. Then each of</p> <p>19 them would have to be adjusted to be included in</p> <p>20 that analysis. But looking at this table, you could</p> <p>21 not include that.</p> <p>22 Q. Let's -- okay.</p> <p>23 A. No. I do this for a living, I mean.</p> <p>24 Q. Let's look back at the -- let's look back</p> <p>25 at the Woolen forest plot. And when you mentioned</p>	<p style="text-align: right;">Page 256</p> <p>1 understand, a random meta-analysis. So the weight</p> <p>2 is being driven by these larger studies with precise</p> <p>3 confidence intervals. I would have liked to see</p> <p>4 weights. You know, when I do the meta-analysis, I</p> <p>5 report weights.</p> <p>6 Q. And by "weights," you mean a quantitative</p> <p>7 assignment to each study?</p> <p>8 A. Exactly. How much weight was this in the</p> <p>9 analysis.</p> <p>10 Q. Okay.</p> <p>11 A. But I can tell you, looking at it, doing</p> <p>12 this all the time, that that's what it is.</p> <p>13 Q. Can we turn back to the PDQ?</p> <p>14 A. Sure.</p> <p>15 Q. It is Exhibit 7, just for your reference.</p> <p>16 A. I got to find it now.</p> <p>17 Q. Unsurprisingly, I'm going to ask you to</p> <p>18 turn to the perineal talc exposure section of the</p> <p>19 PDQ.</p> <p>20 A. Let me find it. I'm going to find it.</p> <p>21 What is it? ??</p> <p>22 Q. Exhibit 7.</p> <p>23 A. Got it. What is the page number for that?</p> <p>24 Q. It is not paginated.</p> <p>25 A. Okay.</p>
<p style="text-align: right;">Page 255</p> <p>1 the forest plot, you mean Figure 2 on page 2530?</p> <p>2 A. That is correct.</p> <p>3 Q. Okay. And just so I understand your</p> <p>4 opinion -- your basis for saying that Cramer and</p> <p>5 O'Brien are the most important studies -- no. I'm</p> <p>6 sorry.</p> <p>7 MS. PARFITT: Objection.</p> <p>8 Q. Let me -- for saying that Cramer and</p> <p>9 O'Brien contribute the most to the pooled estimate</p> <p>10 is the size of the black box?</p> <p>11 A. No. Yeah. That is because that is a</p> <p>12 reflection of the underlying weight of the</p> <p>13 meta-analysis, but it's not only that. You can get</p> <p>14 even more precise because you can look at the</p> <p>15 difference in the confidence interval.</p> <p>16 For example, if you look at Wu, you're</p> <p>17 talking about 1.34 to 3.23. So that's a wide, you</p> <p>18 know, confidence interval as reflected in the, you</p> <p>19 know, small box as well as -- but if you look at</p> <p>20 Cramer, you see it's 78 minus 20. That would be .58</p> <p>21 difference. If you look at O'Brien, it's 1.68 minus</p> <p>22 17. So it's a little more than that.</p> <p>23 So that's how weighting occurs. So the</p> <p>24 ones that have wider confidence intervals are</p> <p>25 contributing less weight, even though this is, as I</p>	<p style="text-align: right;">Page 257</p> <p>1 Q. It's towards the end.</p> <p>2 A. Endometriosis -- hormonal replacement</p> <p>3 therapy, blah, blah, blah. Where is talc?</p> <p>4 Q. Two pages behind that.</p> <p>5 A. Got it.</p> <p>6 Q. Okay. Thank you. Can we look at the</p> <p>7 second paragraph of perineal talc exposure and</p> <p>8 particularly the sentence beginning "A meta-analysis</p> <p>9 of ten case control studies"?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. "A meta-analysis of 10 case control</p> <p>12 studies and a highly selected subset analysis of one</p> <p>13 prospective cohort study found an association -- OR</p> <p>14 1.47, 95 percent confidence interval, 1.31 to 1.65</p> <p>15 -- among women who used perineal talc at least twice</p> <p>16 a week." And you see that the -- that is to</p> <p>17 Citation 10, which is the Woolen study; right?</p> <p>18 A. That is correct.</p> <p>19 Q. Okay. And you understand the highly</p> <p>20 selected subset analysis of one prospective cohort</p> <p>21 study to refer to the subset of O'Brien they used?</p> <p>22 A. That is correct.</p> <p>23 Q. Okay. Next sentence, "The subset analysis</p> <p>24 of the prospective study was inconsistent with the</p> <p>25 main finding of the initial report." Do you agree</p>

<p style="text-align: right;">Page 258</p> <p>1 with that statement?</p> <p>2 A. No. And let me explain why. So, you know,</p> <p>3 the first statement is just statement of results and</p> <p>4 includes -- talks about O'Brien.</p> <p>5 The second statement is "The subset was</p> <p>6 inconsistent with the main findings of the original</p> <p>7 report." Well, the subset analysis of the</p> <p>8 prospective study was the only one which actually</p> <p>9 provided data on frequency by more than two times</p> <p>10 per week. The original analysis provided data --</p> <p>11 they define "frequency" as weekly. So you can't</p> <p>12 compare twice a week versus weekly.</p> <p>13 So, you know, there's, like, apples to</p> <p>14 oranges. O'Brien did not provide this data at the</p> <p>15 time of the publication. So this is a different set</p> <p>16 of data. So what are they comparing? When they say</p> <p>17 "The subset analysis of this prospective study was</p> <p>18 inconsistent with the main" -- I mean, this whole --</p> <p>19 this issue is about frequency. And the frequency as</p> <p>20 defined here is twice a week, which was not the</p> <p>21 analysis in O'Brien.</p> <p>22 Q. So let me ask two questions to follow up on</p> <p>23 that. You said in your answer, I believe, that the</p> <p>24 subset used in the Woolen meta-analysis was the only</p> <p>25 one that satisfied the frequency inclusion criteria.</p>	<p style="text-align: right;">Page 260</p> <p>1 Do you know what percentage of the O'Brien</p> <p>2 sample was ultimately included in Woolen?</p> <p>3 A. I didn't calculate the percentage. I mean,</p> <p>4 whatever the sample was, you know, frequency was</p> <p>5 relevant.</p> <p>6 Q. Can we turn back to your report?</p> <p>7 A. Page?</p> <p>8 Q. 6. Final full paragraph, starting about</p> <p>9 half to two thirds of the way through that</p> <p>10 paragraph, "Among the five."</p> <p>11 A. Final -- Woolen?</p> <p>12 Q. No. It's page 6.</p> <p>13 A. Okay. 6. Yeah. My report, new report?</p> <p>14 Q. Of your new report?</p> <p>15 A. Yeah. Go ahead.</p> <p>16 Q. Okay. "Among the five cohort studies</p> <p>17 included in Health Canada's review, they reported no</p> <p>18 statistically significant associations between</p> <p>19 genital talcum powder use and risk of epithelial</p> <p>20 ovarian cancer. But the majority of cohort studies</p> <p>21 also reported an elevated risk consistent with the</p> <p>22 case control studies." By "elevated risk," do you</p> <p>23 mean a point estimate above 1.0?</p> <p>24 A. That is correct.</p> <p>25 Q. Okay. Do you consider any point estimate</p>
<p style="text-align: right;">Page 259</p> <p>1 A. Two of them. Sister did. And Sister</p> <p>2 had -- you know, they provided that Sister had,</p> <p>3 like, what, two cases.</p> <p>4 Q. I'm sorry. Yes. That's true. But -- that</p> <p>5 is true. But in addition, Dr. O'Brien provided the</p> <p>6 all-women data that also met the inclusion criteria;</p> <p>7 right?</p> <p>8 A. Which one? Where did you see that?</p> <p>9 MS. PARFITT: Let's go back to that.</p> <p>10 Q. The all-women data we talked about earlier</p> <p>11 as opposed to the women with intact tubes data?</p> <p>12 A. Yes. Yes. Yeah. But -- let me clarify.</p> <p>13 I don't think that this interpretation,</p> <p>14 Reference 11, when they're talking about -- I think</p> <p>15 they are referring to -- they have -- I don't think</p> <p>16 this refers to that table of the Woolen report.</p> <p>17 I think this refers to the subset analysis</p> <p>18 of the prospective cohort study was inconsistent</p> <p>19 with the main findings of the original report, which</p> <p>20 is when they go back to O'Brien.</p> <p>21 Q. Right.</p> <p>22 A. But O'Brien's frequency is weekly. So how</p> <p>23 are you going to compare?</p> <p>24 Q. I was simply asking a follow-up question to</p> <p>25 something you said in your answer.</p>	<p style="text-align: right;">Page 261</p> <p>1 above 1.0 to represent an elevated risk?</p> <p>2 MS. PARFITT: Objection. Asked and</p> <p>3 answered many hours ago exhaustively.</p> <p>4 A. I think we had this discussion. Is it 1.2,</p> <p>5 1.3? I don't have -- you know, I think I sort of</p> <p>6 take an opinion on what the American Statistical</p> <p>7 Association has said. It's really explained in</p> <p>8 detail in my previous report.</p> <p>9 Q. You're on the editorial board of two new</p> <p>10 journals since your previous report, Frontiers in</p> <p>11 Drug Safety and Frontiers in Primary Care and Family</p> <p>12 Medicine.</p> <p>13 A. That is correct.</p> <p>14 Q. Do you know if those journals require</p> <p>15 submissions of P values or confidence intervals?</p> <p>16 A. All journals require.</p> <p>17 Q. Okay.</p> <p>18 A. Submission does not mean, you know -- they</p> <p>19 also require cautious interpretation. And so</p> <p>20 submission of P-values is -- what does that P-value</p> <p>21 mean? And P-values are just a statement that your</p> <p>22 data -- the probability of obtaining data as a more</p> <p>23 extreme when your null hypothesis is true.</p> <p>24 Q. Just to be clear, the answer to my question</p> <p>25 is yes, they do?</p>

<p style="text-align: right;">Page 262</p> <p>1 A. Yes.</p> <p>2 Q. Can we turn back to Health Canada?</p> <p>3 A. Which one is that? 25.</p> <p>4 MS. PARFITT: Absolutely. Right.</p> <p>5 Q. Let's look at the biological plausibility</p> <p>6 discussion in Health Canada. Which is on page --</p> <p>7 MR. MARTIN: Can we go off the record</p> <p>8 for a moment.</p> <p>9 (A break was taken)</p> <p>10 MR. MARTIN: Back on the record.</p> <p>11 Q. Do you see the final -- well, do you see</p> <p>12 the final paragraph of that section, the second of</p> <p>13 two, "Collectively, there is significant exposure</p> <p>14 information lacking to permit a fulsome assessment</p> <p>15 of biological gradient"?</p> <p>16 A. Yes. But in the Taher report, they already</p> <p>17 provided the studies that provide evidence of, you</p> <p>18 know --</p> <p>19 Q. So do you agree --</p> <p>20 MS. PARFITT: Wait. Wait. Please let</p> <p>21 him finish.</p> <p>22 Q. I apologize.</p> <p>23 A. That is why my weight on dose response was,</p> <p>24 you know, was qualified. It doesn't mean there</p> <p>25 cannot be an assessment. You have -- in fact, if</p>	<p style="text-align: right;">Page 264</p> <p>1 A. I will provide you examples. I mean, if</p> <p>2 you look at a tobacco litigation, that has produced</p> <p>3 hundreds of manuscripts. If you look at the opioid</p> <p>4 litigation, there's an archive at UCSF that has</p> <p>5 produced at least -- I wouldn't say "hundreds."</p> <p>6 So, you know, I would recommend that J&J</p> <p>7 come to agreement with -- whenever this matter is</p> <p>8 settled to make these documents available. And I'm</p> <p>9 happy to facilitate that. Exactly.</p> <p>10 Q. My question is not related to</p> <p>11 confidentiality. My question is have you in your</p> <p>12 academic work cited litigation reports as support</p> <p>13 for -- as scientific support?</p> <p>14 MS. PARFITT: Objection. Different</p> <p>15 question.</p> <p>16 A. Not me personally. You asked is there --</p> <p>17 you know, the first question prior to that -- maybe</p> <p>18 you can read that -- the question.</p> <p>19 Q. I agree. It's a different question. It is</p> <p>20 a different question.</p> <p>21 A. You asked, you know, "Are there citations</p> <p>22 to litigation?" And I provided you many examples:</p> <p>23 Vioxx, of, you know, tobacco, of opioids. So as</p> <p>24 long as -- you know, again, you have to evaluate.</p> <p>25 Both reports were considered.</p>
<p style="text-align: right;">Page 263</p> <p>1 one had not performed a fulsome assessment, then I</p> <p>2 would not -- you know, I think that report should</p> <p>3 not -- you know, report would be improper because</p> <p>4 you have to perform -- so there is enough data to</p> <p>5 perform an assessment. But whether you have a</p> <p>6 gradient or not, you have to explain.</p> <p>7 You know, there are some studies that</p> <p>8 provide exposure response based on how these are</p> <p>9 measured, other studies that don't. So I think this</p> <p>10 sentence is not incompatible with their own, you</p> <p>11 know, report -- I mean, in the study.</p> <p>12 Q. I'd like to move to the previous paragraph</p> <p>13 and, in particular, draw your attention to several</p> <p>14 of the citations there, particularly in the first</p> <p>15 parenthetical, Ballman 2019, Diette 2019, and -- in</p> <p>16 the last large parenthetical -- Moorman 2018,</p> <p>17 Siemiatycki 2018, Singh 2018, Smith-Bindman 2018,</p> <p>18 Wolf 2018. Do you know what those citations are?</p> <p>19 A. Yeah. They are citations to expert reports</p> <p>20 in previous -- some of them. I mean, I don't know</p> <p>21 if all of them are. Seems like it is.</p> <p>22 Q. That is correct. Are you -- is it typical</p> <p>23 in scientific literature to cite litigation expert</p> <p>24 reports?</p> <p>25 MS. PARFITT: Objection. Form.</p>	<p style="text-align: right;">Page 265</p> <p>1 Q. So can you answer the question that I</p> <p>2 asked?</p> <p>3 A. Me? No, I have not. No. But, you know,</p> <p>4 in this report I have. In my report I have.</p> <p>5 Q. Correct. But in your academic work you</p> <p>6 have not.</p> <p>7 A. No.</p> <p>8 Q. Can we turn to page 17?</p> <p>9 MS. PARFITT: Health Canada?</p> <p>10 MR. MARTIN: Health Canada.</p> <p>11 A. Okay. Health Canada. Yeah. I'm there.</p> <p>12 Q. Second half of the page.</p> <p>13 A. Yes.</p> <p>14 Q. Second sentence of the second-to-last</p> <p>15 paragraph, "There are a number of different tumor</p> <p>16 types with characteristic histological (verbatim)</p> <p>17 features, distinctive molecular signatures, and</p> <p>18 disease trajectories. Moreover, these tumors are</p> <p>19 heterogeneous and can arise from different tissues</p> <p>20 of the female reproductive tract, including the</p> <p>21 fallopian tube epithelium."</p> <p>22 Do you agree that different subtypes of</p> <p>23 ovarian cancers have different molecular signatures?</p> <p>24 A. Right. I'm not a molecular scientist. I</p> <p>25 know that different -- what I know is that different</p>

<p style="text-align: right;">Page 266</p> <p>1 types of epithelial ovarian cancer can arise. For 2 example, endometrioid can arise from different; 3 clear-cell can arise from different; mesotheliomas 4 can arise from different; you know, serous ovarian 5 cancers can arise from different. 6 I don't know what they mean by "molecular 7 signatures." I don't really understand. That's not 8 my area of expertise. 9 Q. Can we turn to page 45 of Health Canada? 10 A. Yes. 11 Q. Final sentence of the first paragraph -- 12 this is sort of where they sum things up -- "While 13 there may not be consensus within the scientific 14 community regarding the" -- 15 MS. PARFITT: One second. 16 A. Where is that? Page 45; right? 17 Q. Yes. 18 A. Final sentence of the -- 19 Q. First paragraph. 20 MS. PARFITT: Up here. 21 A. Okay. Yeah. Go ahead. 22 Q. "While there may not be consensus within 23 the scientific community regarding the 24 interpretation of the epidemiological information, 25 after weighing the available lines of evidence, the</p>	<p style="text-align: right;">Page 268</p> <p>1 established scientific consensus. I mean, you look 2 at the OCAC consortiums. You look at, you know, the 3 studies published. 4 So it's like "What is the threshold" when 5 you say there's scientific consensus. How many 6 scientists do you need? Hundred? Five hundred? 7 We've had 30 studies. Do you need a hundred? I 8 don't know. I don't have a level when I can say 9 there's scientific consensus. 10 Q. Are you aware of any -- are you aware of 11 any regulator in the United States that has found 12 talc -- peroneal talc use to constitute -- cause 13 ovarian cancer? 14 MS. PARFITT: Objection. Form. 15 A. Yes. 16 Q. Which one? 17 A. The EPA. 18 Q. Is that -- 19 A. Not -- yeah. EPA. The recent update. 20 Q. Your opinion is that this document 21 represents the EPA's opinion that talc use causes 22 ovarian cancer? 23 A. Yes. 24 Q. Okay. 25 A. And we can read that if you want.</p>
<p style="text-align: right;">Page 267</p> <p>1 assessment determined that the current data are 2 indicative of a causal effect." Is that sentence 3 consistent with your conclusion? 4 A. Yes. 5 Q. Do you agree that there is not consensus 6 within the scientific community? 7 MS. PARFITT: Objection. Form. 8 A. Well, that's what they, you know, 9 interpreted. But after reviewing the whole body of 10 evidence, they conclude and I conclude that the 11 current data are indicative. There's, you know, 12 different scientific consensus about lots of 13 different things. But that's what they state. 14 Q. Understood. I'm just trying to get your 15 opinion on the state of scientific opinion. Do you 16 believe there's a scientific consensus about these 17 issues? 18 A. The scientific -- I don't really -- I mean, 19 you know, everybody has their opinions. I think 20 that -- why make it specific to talc and ovarian 21 cancer? It could be talc and endometrial cancer. I 22 think that's not relevant to causality. 23 I mean, talc and -- you know, if it's 24 smoking, a lung cancer -- obviously, it's not to 25 that level. But, you know, there is enough</p>	<p style="text-align: right;">Page 269</p> <p>1 Q. We have 12 minutes left. I don't think we 2 can. 3 A. You asked a question. 4 Q. I understand. 5 A. Got to get it in the record. 6 Q. Let's talk about Fletcher 2019. We have to 7 mark it. 8 MR. MARTIN: It's Harper, Harper 2019. 9 MS. PARFITT: As we're going on the 10 track here, final track, you're picking up speed. 11 She is going to be losing speed. We'll have a 12 disconnect here. You're fired up. 13 THE WITNESS: I'm trying to -- 14 MS. PARFITT: I know. It's hard for her 15 to get your words. 16 (2019 article by Amy K. Harper, et al., 17 Exhibit 29, marked) 18 Q. This is published in a journal called 19 Edizioni Minerva Medica. Do you see that? 20 A. Yes. 21 Q. Prior to including this article in your 22 expert report, had you ever heard of that journal? 23 A. Actually, I've heard of the Minerva 24 journals. I don't know about this Edizioni Minerva 25 Medica, but I know about the Minerva group of</p>

<p style="text-align: right;">Page 270</p> <p>1 journals. I don't know specifically this journal. 2 Q. Can we look at the final page? 3 A. Okay. 4 Q. "Funding" section, "A portion of Ghassan M. 5 Saed's time conducting this research was paid for by 6 the lawyers representing plaintiffs in the talcum 7 powder litigation." We've talked about this a lot. 8 That doesn't affect your view of the reliability of 9 the article? 10 MS. PARFITT: Objection. 11 A. You know, to the extent that I talked about 12 it, I didn't say that it doesn't. I said it's an 13 issue of interpretation. Obviously, I have to look 14 at the methods. And, you know, I'm aware that they 15 were the authors in this. 16 Q. Can we look back on the first page in the 17 abstract? Do you see where it says "72 hours of 18 treatment"? 19 A. Yes. 20 Q. Okay. And do you see where it says that 21 "exposure to talcum powder induces malignant 22 transformation" in the "conclusion" section? 23 A. In the abstract? 24 Q. In the "conclusion" section of the 25 abstract. Yes.</p>	<p style="text-align: right;">Page 272</p> <p>1 reliance list reflect everything that you relied 2 upon in the drafting of your 2023 report? 3 A. Drafting, yes. But then I have 4 subsequently reviewed other things that was provided 5 to -- you know, since November. 6 Q. Those were the documents that were provided 7 to us on Monday? 8 A. Yeah. 9 Q. Okay. Is every document that you have 10 reviewed in forming your opinions included in one of 11 the following three places: The 2019 reliance list 12 -- excuse me -- the 2018 reliance list, the 2023 13 reliance list, and the documents produced on Monday? 14 A. Yeah. I cannot think of any other 15 document. 16 Q. Can we return to the Narod paper very 17 briefly? 18 A. Which is number? 19 Q. That is -- I can give you an unmarked copy 20 if you can't find it. 21 MS. PARFITT: It's 22. 22 A. It's probably there somewhere. 23 Q. Do you mind just referencing my copy? 24 MS. PARFITT: I've got it right here. 25 Q. Great. Thank you. Can you look at the</p>
<p style="text-align: right;">Page 271</p> <p>1 A. Yes. 2 Q. Okay. Does 72 hours strike you as a short 3 period of time in which to observe malignant 4 transformation? 5 MS. PARFITT: Objection. Form. 6 A. Yeah. So, again, I'm not, you know -- I 7 can interpret the studies. And I have, you know, 8 looked at them. And they are -- experiments seem 9 reasonable. And whether these occur -- malignant 10 transformations occur in 72 hours or takes 400 11 hours, I don't know that. I mean, it seems, you 12 know, reasonable on the surface. And I relied on 13 that to make my assessment. 14 Q. But it's not your area of expertise? 15 A. Yeah. I wouldn't say that this, you know 16 -- how long does it take to induce malignant 17 transformation. 18 Q. I just want to do some final housekeeping 19 the last few minutes. Can you look at your new 20 reliance list at the end of your 2023 report? 21 A. Yeah. 22 Q. Okay. 23 A. Which is which page? Yeah. 24 Q. Are the 75 articles on this reliance list 25 everything that you -- do the 75 articles on this</p>	<p style="text-align: right;">Page 273</p> <p>1 last paragraph? 2 A. Taher or Narod? 3 Q. Narod. 4 MS. PARFITT: I'm sorry. 5 Q. I got it here. Can you just look at the 6 last paragraph there? 7 A. Last -- second page, last paragraph? 8 Q. Second page, last paragraph. Do you see 9 the third sentence, "I don't think we should try to 10 ascribe any particular case of ovarian cancer to 11 prior talc use"? See that sentence? 12 A. Yes. 13 Q. Do you agree with that sentence? 14 A. I mean, just -- 15 MS. PARFITT: Objection to the form. 16 Please go ahead. 17 A. Just prior to that, they say "In the 18 interest of public health, I believe we should 19 caution women against using genital talcum powder." 20 But then they, you know -- so I -- that, to me, 21 means that they're ascribing risk to genital talcum 22 powder so -- but then they get into this particular 23 case -- any particular case. 24 So that would depend on how you -- what is 25 in that case, what is the age, what is the sex, what</p>

<p style="text-align: right;">Page 274</p> <p>1 is oral contraceptive use, what is the family 2 history, what is the genetic markers. 3 I mean, blanket, you cannot say that -- 4 this case. But I think someone with more experience 5 as a gynecologic oncologist could look at the data 6 and can ascribe or can refute that. This does not 7 occur. 8 Q. So you don't agree with that sentence? 9 A. Yeah. 10 Q. As a -- 11 A. I don't think we should to ascribe -- I 12 think they are -- you know, they should have been 13 much more nuanced in this, that this requires 14 contextual considerations. 15 Q. Do you know who any of the bellwether 16 plaintiffs in the federal MDL are? 17 A. No. 18 Q. Do you know who any of the trial plaintiffs 19 in the New Jersey MCL are? 20 A. I don't know. 21 Q. The New Jersey state court proceedings. 22 A. No, I don't. I don't think so. 23 Q. You're not offering an opinion on the 24 causation of any individual person's ovarian cancer? 25 A. No. That's not my area of expertise.</p>	<p style="text-align: right;">Page 276</p> <p>1 asbestos; regulation of certain conditions of use 2 under the Toxic Substance Control Act, TSCA," 3 document, Exhibit 30, marked) 4 Q. It's entitled "EPA Asbestos Part 1; 5 chrysotile asbestos; regulation of certain 6 conditions of use under the Toxic Substance Control 7 Act, TSCA." Do you see that? 8 A. Yes. 9 Q. The agency is the Environmental Protection 10 Agency. Do you see? 11 A. Yes. 12 Q. You see it says "Final rule" at the top? 13 A. Yes. 14 Q. Okay. Want you to turn first to the 15 summary. I'm going to reference a couple of 16 sections here. Go to the summary on page 1. 17 A. That is correct. 18 Q. It states "The Environmental Protection 19 Agency -- EPA or the agency -- is issuing this final 20 rule under the Toxic Substance Control Act to 21 address to the extent necessary the unreasonable 22 risk of injury to health presented by chrysotile 23 asbestos based on the risks posed by certain 24 conditions of use. 25 "The injuries to human health include</p>
<p style="text-align: right;">Page 275</p> <p>1 Q. You don't intend to do so in this 2 litigation? 3 A. No. That's not my area of expertise. 4 MR. MARTIN: Can we go off the record? 5 I'll review my notes. 6 (A break was taken) 7 MR. MARTIN: Back on the record. 8 Nothing further from me at this point, Dr. Singh. 9 THE WITNESS: Thank you. 10 MS. PARFITT: Dr. Singh, I just have a 11 few questions as part of the follow-up. 12 EXAMINATION 13 BY MS. PARFITT: 14 Q. Dr. Singh, you were asked questions within 15 the last hour with regard to any regulatory body 16 here in the United States that has addressed the 17 issue of asbestos in talc and ovarian cancer. Do 18 you remember that series of questions? 19 A. That is correct. 20 Q. All right. And I believe you referenced 21 the EPA; is that correct? 22 A. That is correct. 23 Q. Let me show you what we will have marked as 24 Exhibit No. 30. 25 ("EPA Asbestos Part 1; chrysotile</p>	<p style="text-align: right;">Page 277</p> <p>1 mesothelioma and lung, ovarian, laryngeal cancers 2 resulting from chronic inhalation exposure to 3 chrysotile asbestos." 4 Is this the -- one of the sections of the 5 EPA report that you were referring to earlier when 6 counsel asked you what you were relying on for 7 purposes of your opinion that the EPA had made a 8 final rule regarding causation and asbestos and 9 talc? 10 MR. MARTIN: Objection. 11 A. No. Yeah. That was one of the segments 12 but sort of another pertinent section is on page 14. 13 Q. Tell us about that. 14 A. The last -- at the bottom of page 14 we 15 have -- so the first one you presented is summary. 16 Talks about asbestos as a cause of, you know, risk 17 factors, various cancers including mesothelioma, 18 lung, and ovarian. 19 But here at the end of page 14, the EPA 20 says, additionally, some talc deposits and articles 21 containing talc have been shown to contain asbestos. 22 Thus, EPA recognizes that use of talc may present 23 the potential for asbestos exposure. 24 Q. What significance, if any, does that have 25 to your opinions in this case?</p>

<p style="text-align: right;">Page 278</p> <p>1 A. Well, it's, you know -- my opinions are --</p> <p>2 overall causal opinion is that, you know, talc is --</p> <p>3 talc is causally related to development of ovarian</p> <p>4 cancer, not predicated on -- necessarily on the</p> <p>5 basis of asbestos. But now, more and more evidence</p> <p>6 is emerging such as -- you know, this was published</p> <p>7 after I submitted my report -- that further enhances</p> <p>8 the evidence on biologic plausibility segment on --</p> <p>9 as one more further in the chain of evidence about</p> <p>10 talc and ovarian cancer.</p> <p>11 Q. All right. If you would turn as well to</p> <p>12 page 20 of the report.</p> <p>13 A. My report?</p> <p>14 Q. The EPA report.</p> <p>15 A. Okay. Yes.</p> <p>16 Q. Subsection 1, it's called "Description of</p> <p>17 unreasonable risk."</p> <p>18 A. Yes.</p> <p>19 Q. If you would read -- let me just ask the</p> <p>20 question -- read to yourself the first half of that</p> <p>21 paragraph?</p> <p>22 A. Yes. "The health endpoint driving EPA's</p> <p>23 assessment" -- "determination" -- I'm sorry -- "of</p> <p>24 unreasonable risk for chrysotile asbestos under the</p> <p>25 conditions of use is cancer from inhalation</p>	<p style="text-align: right;">Page 280</p> <p>1 the potential additional exposure to PFAS that might</p> <p>2 result from this action."</p> <p>3 Do you have an opinion to a reasonable</p> <p>4 degree of scientific certainty that indeed</p> <p>5 chrysotile asbestos is a known human carcinogen that</p> <p>6 causes mesothelioma, lung, ovarian, and laryngeal</p> <p>7 cancers?</p> <p>8 A. I mean, I think that is indisputable, that,</p> <p>9 you know, asbestos is a carcinogen and specifically</p> <p>10 for ovarian cancer. I mean, you know, did I do the</p> <p>11 causal assessment? No. But IARC has done it. EPA</p> <p>12 has done it. Others have found it. I would say the</p> <p>13 fact that asbestos is an ovarian carcinogen is, you</p> <p>14 know -- as we were talking about scientific</p> <p>15 consensus, I mean, that is beyond dispute.</p> <p>16 Q. And your opinions today with regard to</p> <p>17 talcum powder, do they consider the fact -- are they</p> <p>18 based upon the fact that talc contains asbestos?</p> <p>19 A. Yeah. I mean, as I noted in my report --</p> <p>20 earlier report that, you know, studies have</p> <p>21 described that, you know, investigators have found</p> <p>22 and FDA has found and testing by Drs. Longo and</p> <p>23 others have found the presence, that talc, you know,</p> <p>24 contains asbestos.</p> <p>25 Q. But your opinion in this case is that</p>
<p style="text-align: right;">Page 279</p> <p>1 exposure. Unreasonable risk includes the risk of</p> <p>2 mesothelioma and lung, ovarian, and laryngeal</p> <p>3 cancers from chronic inhalation exposure."</p> <p>4 Q. Similarly, what, if any, significance do</p> <p>5 you attach to that ruling by the EPA as to the</p> <p>6 opinions you've given in this case?</p> <p>7 A. Yeah. So, as I stated in my earlier report</p> <p>8 in '18, that this is one other, you know, one --</p> <p>9 another pathway -- a plausible pathway. If talc</p> <p>10 contaminated with asbestos is inhaled, that may be</p> <p>11 another potential pathway by which there's an</p> <p>12 increased causal risk of ovarian cancer.</p> <p>13 Q. Okay. And lastly, if you'll turn to</p> <p>14 page 92 and 93 of the EPA report that you've</p> <p>15 referenced earlier as a source supporting your</p> <p>16 statement that a governmental regulatory agency has</p> <p>17 opined on these issues. If you go to the bottom of</p> <p>18 that page, if you will.</p> <p>19 A. Yes.</p> <p>20 Q. Bottom of 92, it starts "EPA believes that</p> <p>21 the benefits" -- "EPA believes the benefits of</p> <p>22 removing chrysotile asbestos, a known human</p> <p>23 carcinogen that causes cancer, mesothelioma, lung,</p> <p>24 ovarian, and laryngeal cancer, from continued use in</p> <p>25 the United States are significant enough to outweigh</p>	<p style="text-align: right;">Page 281</p> <p>1 talcum powder can cause ovarian cancer based upon</p> <p>2 the fact that talc can contain asbestos or may not</p> <p>3 contain asbestos; correct?</p> <p>4 A. Yeah. My causal opinion is, you know, I --</p> <p>5 to the extent I did, I mirrored that I'm not</p> <p>6 predicated my opinion on the presence of asbestos.</p> <p>7 But I'm, you know -- there are studies that -- and I</p> <p>8 cited those studies. But now with the EPA ruling</p> <p>9 and -- it is becoming more and more likely that that</p> <p>10 is one more pathway that, you know, is suggesting</p> <p>11 causal risk between talc and ovarian cancer.</p> <p>12 Q. All right, Dr. Singh. You were -- let me</p> <p>13 show you, if I will, Exhibit No. 24, the Tanha</p> <p>14 article entitled "Investigation on factors</p> <p>15 associated with ovarian cancer: An umbrella review</p> <p>16 of systematic review and meta-analysis." That</p> <p>17 was --</p> <p>18 MR. MARTIN: Which exhibit is this? I'm</p> <p>19 sorry.</p> <p>20 MS. PARFITT: Exhibit 24.</p> <p>21 Q. Let's pull yours here. Tanha?</p> <p>22 A. That's the umbrella review?</p> <p>23 Q. Yes. Here we go? Let me show you Exhibit</p> <p>24 No. 24, Tanha. If I can direct your attention,</p> <p>25 please, to page 15 of 17. Let me know when you get</p>

<p style="text-align: right;">Page 282</p> <p>1 there.</p> <p>2 A. Yes.</p> <p>3 Q. All right. You'll recall that counsel</p> <p>4 asked you a question with regard to whether or not</p> <p>5 you agreed or disagreed with the statement that</p> <p>6 states "The ovarian carcinogenesis mechanism of</p> <p>7 perineal talc use has remained unclear." Do you</p> <p>8 remember being asked that question?</p> <p>9 A. Yes.</p> <p>10 Q. What counsel did not read to you is the</p> <p>11 following: "Based on a hypothesis, however, as an</p> <p>12 external stimulus, talc can ascend from the vagina</p> <p>13 to the uterine tubes and trigger a chronic</p> <p>14 inflammatory response, further promoting the OC" --</p> <p>15 ovarian cancer -- "development, cellular injuries,</p> <p>16 and oxidative stress, and local elevation of</p> <p>17 inflammatory mediators -- for example, cytokines and</p> <p>18 prostaglandins -- could be mutagenic, thus</p> <p>19 encouraging carcinogenesis." Do you agree or</p> <p>20 disagree with that statement?</p> <p>21 A. Yeah. And I have cited a slight different</p> <p>22 version in my testimony about Dr. O'Brien providing</p> <p>23 exactly -- if it's a slight difference on nuance,</p> <p>24 you know -- the same suggestion of mechanism of</p> <p>25 carcinogenesis.</p>	<p style="text-align: right;">Page 284</p> <p>1 A. It's the first page, "introduction."</p> <p>2 "Introduction," third column, third line, "Talc is a</p> <p>3 poorly soluble particle. And animal models have</p> <p>4 shown that, once deposited onto epithelial cells, it</p> <p>5 can cause chronic inflammation, leading to a series</p> <p>6 of mutagenic events" -- exactly the same that we</p> <p>7 were seeing in the other -- "and this effect is</p> <p>8 worse in talc contaminated with asbestos, a known</p> <p>9 carcinogen" and the cite reference 19, which is the</p> <p>10 IARC working group.</p> <p>11 Not only that, you know, we had a</p> <p>12 discussion earlier about "Well, you know, there's no</p> <p>13 evidence of migration in Health Canada." But that</p> <p>14 is not entirely correct, because if you look at</p> <p>15 page 22 of -- going to page 22 of --</p> <p>16 Q. Health Canada?</p> <p>17 A. -- Health Canada, the first paragraph they</p> <p>18 discuss the studies. And they say that "This lends</p> <p>19 support to the idea that externally applied talc can</p> <p>20 migrate from the perineal and, therefore, the</p> <p>21 Johnson study." So it's not that Health Canada is</p> <p>22 saying it cannot migrate.</p> <p>23 MR. MARTIN: Was this produced to us on</p> <p>24 Monday?</p> <p>25 MS. PARFITT: It was.</p>
<p style="text-align: right;">Page 283</p> <p>1 Q. Let me show you that. I'm not sure it was</p> <p>2 marked. It's Ogunsina and O'Brien.</p> <p>3 MS. PARFITT: If it was not marked,</p> <p>4 we'll mark it as Exhibit 31.</p> <p>5 (Article by Kemi Ogunsina, M.D., et al.,</p> <p>6 Exhibit 31, marked)</p> <p>7 MR. MARTIN: Do you have a copy of it?</p> <p>8 MS. PARFITT: We do. I think we have</p> <p>9 three.</p> <p>10 Q. Let me show you what we've marked</p> <p>11 Exhibit 31. It's the Ogunsina and Dr. Katie O'Brien</p> <p>12 article and some others.</p> <p>13 A. Yeah.</p> <p>14 Q. You referenced in speaking about the Tanha</p> <p>15 article that -- the position that the Tanha editors</p> <p>16 had taken as it relates to how talc can migrate and</p> <p>17 cause this chronic inflammatory response, promoting</p> <p>18 these cellular injuries, oxidative stress, and local</p> <p>19 reason of inflammatory mediators. What is the</p> <p>20 position of the O'Brien and Ogunsina article with</p> <p>21 regard to that same opinion?</p> <p>22 A. They cannot be more explicit than they are</p> <p>23 here in page 1 -- 665 E1: "Talc is a poorly soluble</p> <p>24 particle" --</p> <p>25 MR. MARTIN: What page?</p>	<p style="text-align: right;">Page 285</p> <p>1 MR. MARTIN: I do not see it anywhere.</p> <p>2 MS. PARFITT: Should be in the Dropbox.</p> <p>3 A. The Health Canada, I'm sure, is there.</p> <p>4 MS. PARFITT: What I'd like to do next</p> <p>5 is have marked as Exhibit No. 32 an article entitled</p> <p>6 "The association between douching, genital talc use,</p> <p>7 and the risk of prevalent and incident cervical</p> <p>8 cancer" by Katie O'Brien, Weinberg, D'Aloisio --</p> <p>9 D-a-l-o-i-s-i-o -- Moore, and Sandler. Counsel,</p> <p>10 here's a copy.</p> <p>11 (Article by Katie M. O'Brien, et al.,</p> <p>12 Exhibit 32, marked)</p> <p>13 Q. All right, Dr. Singh. Is Exhibit 32 an</p> <p>14 article that you've previously reviewed for purposes</p> <p>15 of your opinions in this case?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. And what, if any, significance does</p> <p>18 this article, O'Brien, Sandler, et al., have on your</p> <p>19 opinions of your -- excuse me -- talcum powder</p> <p>20 exposure can cause ovarian cancer?</p> <p>21 A. So if you go to the second page of the</p> <p>22 article, 221114836, they are write in the top just</p> <p>23 above the methods, "Genital talc use could also</p> <p>24 plausibly contribute to cervical cancer risk. Talc</p> <p>25 applied to underwear, sanitary napkins, diaphragms,</p>

<p style="text-align: right;">Page 286</p> <p>1 directly" -- "can enter the vagina and travel up the 2 reproductive tract. Talc particles may act as 3 irritants, inciting an inflammatory response and 4 potentially affect individuals' susceptibility and 5 response to HPV. Additionally, more severe 6 effects" -- 7 Q. Excuse me. You missed a word. 8 A. "Or more severe effects could occur" -- 9 Q. I'm sorry. You missed another word. Just 10 so the record's correct, did you say "adverse"? 11 A. Yeah. "Adverse affects could occur through 12 the talc containing asbestos, a known carcinogen 13 sometimes mined in the same locations." 14 Q. Continue. 15 A. And the epidemiological literature supports 16 a possible positive association between genital talc 17 use and ovarian cancer, in which they cite their own 18 study without any qualification about patent or 19 nonpatent tubes. So that's -- Reference 35 is 20 O'Brien, et al., the pooled analysis we've been 21 discussing. 22 Q. The 2020 article? 23 A. Yes. 24 Q. I believe I asked you what the 25 significance, if any, of this article was to your</p>	<p style="text-align: right;">Page 288</p> <p>1 fibroids; correct? 2 A. Yes. 3 Q. It does not evaluate the relationship -- it 4 does not directly evaluate the relationship between 5 genital talc use and cancer; correct? 6 A. Yeah. And this is a contextual study. And 7 partly why I looked at it and -- I looked at it was 8 I was interested in Dr. O'Brien's interpretation of 9 statistical significance. In fact, one of his other 10 studies, which was the Sister Study in which he 11 thought -- you know, she interprets positive 12 associations for hazard ratios that are not 13 significant, you know, the update of the Sister 14 Study by Chang. 15 So I wanted to -- I was interested in how 16 does she think about other cancers. So here, I see, 17 you know -- in fact, this goes to uterine fibroids. 18 There's knowing that -- it is not specific to talc 19 and ovarian cancer. But it provides context. 20 That's all. 21 Q. It does not measure cancer outcomes. 22 A. No. 23 Q. Okay. Can we look at the EPA document, 24 Exhibit 30, and can we look at the first page? 25 A. Page?</p>
<p style="text-align: right;">Page 287</p> <p>1 opinions. 2 A. Yeah. The significance is, first of all, 3 Dr. O'Brien, you know -- I was shown an article. 4 She talks about an experimental model. She has in 5 multiple places, you know, mechanisms and models of 6 how talc migrates, causes -- we're talking about 7 migration, inflammation, contamination with asbestos 8 causing -- she has a real outline of the model. 9 She couldn't have described it better than 10 myself and also interprets her own article without 11 any qualification for patent tubes as a possible 12 positive association. 13 MS. PARFITT: I don't have any further 14 questions, subject to counsel. 15 MR. MARTIN: Let me just review a couple 16 of things. I'll see if I have another question. 17 (A break was taken) 18 MR. MARTIN: Back on the record. 19 Q. Can I direct your attention to Ogunsina, 20 Exhibit 31? 21 MR. MARTIN: And I do just want to put 22 on the record that, as a result of a syncing error, 23 that was not produced to us on Monday. So I have 24 read it during a break. 25 Q. The outcome of interest in that study is</p>	<p style="text-align: right;">Page 289</p> <p>1 Q. Page 1, title. Do you see where it says 2 "Asbestos Part 1; chrysotile asbestos; regulation of 3 certain conditions of use"? 4 A. Yeah. 5 Q. Okay. Can we flip down to page 15? And I 6 think this might be a -- excuse me -- the end of 7 page 14. I think this might be a passage that you 8 read with Michelle earlier. Let me know when you're 9 there. 10 MS. PARFITT: Bottom of 14. 11 A. Yes. 12 Q. And I think this is the passage that you 13 read: "Additionally, some talc deposits and 14 articles containing talc has been shown to contain 15 asbestos. The EPA recommends that certain uses of 16 talc may present the potential for asbestos 17 exposure. Where EPA identifies reasonably available 18 information demonstrating the presence of asbestos 19 in talc and where such talc applications fall under 20 Toxic Substances Control Act authority, those 21 applications of asbestos-containing talc conditions 22 will be evaluated in Part 2 of the risk evaluation 23 for asbestos." 24 So would you agree with me this Part 1 of 25 the risk evaluation was not focused on talc that may</p>

Page 290

1 contain asbestos?

2 MS. PARFITT: Objection. Form.

3 A. No. They, you know -- they say they'll do

4 future evaluations. But they also say that talc,

5 you know, as they state here -- some talc deposits

6 and particles containing talc have been shown to

7 contain asbestos.

8 Q. Would you agree with me that exposure to

9 talcum powder was not the focus of this portion of

10 the EPA's review?

11 A. No.

12 MS. PARFITT: Objection.

13 Q. You would not agree with that?

14 A. No. I'm saying that this EPA review is

15 focusing on asbestos and ovarian cancer and noting

16 when that talc can occur. But they're not

17 specifically looking at peroneal talc and cosmetic

18 talc.

19 MR. MARTIN: I don't have anything

20 further.

21 MS. PARFITT: Nothing. Thank you very

22 much. We would ask to read and sign.

23 (Deposition concluded at 5:45 p.m.)

24

25

Page 291

1 REPORTER'S CERTIFICATE

2

3 I, SONYA LOPES, Registered Professional

4 Reporter and Notary Public in and for the

5 Commonwealth of Massachusetts, certify;

6 That the foregoing proceedings were taken

7 before me at the time and place therein set forth,

8 at which time the witness was properly identified

9 and put under oath by me;

10 That the testimony of the witness, the

11 questions propounded, and all objections and

12 statements made at the time of the examination were

13 recorded stenographically by me and were thereafter

14 transcribed;

15 That the foregoing is a true and correct

16 transcript of my shorthand notes so taken.

17 I further certify that I am not a relative or

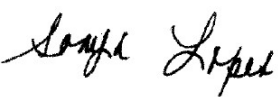
18 employee of any attorney of the parties, nor

19 financially interested in the action.

20 I declare under penalty of perjury that the

21 foregoing is true and correct.

22 April, 2024.

23 

24 Sonya Lopes My Commission Expires:

25 Notary Public October 28, 2027

Page 292

1 WITNESS: Sonal Sing, M.D., M.P.H. [Volume I]

2 DATE: April 4, 2024

3 CASE: IN RE JOHNSON & JOHNSON TALCUM POWDER

4 PRODUCTS MARKETING, SALES PRACTICES, AND

5 PRODUCTS LIABILITY LITIGATION

6

7

8 DISTRIBUTION TO COUNSEL The original signature

9 page/errata sheet was sent to Michelle A. Parfitt,

10 Esq., to obtain signature from the deponent. When

11 signed, please send original to Zachary W. Martin,

12 Esq., who will supply a copy of the signed errata

13 sheet to other counsel present at the deposition.

14

15 WITNESS INSTRUCTIONS After reading the transcript

16 of your deposition, please note any change or

17 correction and the reason for it on the errata

18 sheet. DO NOT make any notations on the transcript

19 itself. Use additional sheets if necessary.

20

21 SIGN AND DATE THE ERRATA SHEET under the pains and

22 penalties of perjury and return it, along with the

23 transcript, to your counsel.

24

25

Page 293

1 IN THE UNITED STATES DISTRICT COURT

2 FOR THE DISTRICT OF NEW JERSEY

3 IN RE JOHNSON & JOHNSON TALCUM

4 POWDER PRODUCTS MARKETING, MDL NO.

5 SALES PRACTICES, AND PRODUCTS 16-2738(MAS)(RLS)

6 LIABILITY LITIGATION

7

8 I, SONAL SINGH, M.D., M.P.H., do hereby

9 certify, under the pains and penalties of perjury,

10 that the foregoing testimony is true and accurate,

11 to the best of my knowledge and belief, with the

12 addition of the following changes/corrections:

13

14 Page/ Line/ Change/Correction

15 _____

16 _____

17 _____

18 _____

19 WITNESS MY HAND, this day of _____, 2024.

20

21

22

23 SONAL SINGH, M.D., M.P.H.

24

25 Cc: Zachary W. Martin, Esq.

[& - 12]

Page 1

&	221:1,4,13,14	1.16. 149:11	1.47 257:14
& 1:6 2:3,19	231:2 236:14	1.17 218:8	1.48. 218:6
8:7,10 19:8	236:15,18	1.17. 141:5	1.5 171:10
48:7 68:23	238:9,11 240:4	1.19 147:15	1.57 250:3
292:3 293:2	240:5 241:12	1.2 181:16,18	251:10 252:24
0	250:12 275:25	182:19 261:4	1.6. 251:17
0 220:7	276:4,16	1.2. 178:20	1.65 257:14
0.0. 220:14	278:16 283:23	1.22 209:19	1.68 255:21
0.05 213:15	289:1,2,24	1.23. 147:2	1.72. 218:8
0.33 212:23,25	1,258 157:2	1.242 220:5	10 4:23 23:3
0.33. 213:3	1-293 1:1	1.25 189:16	44:22,23 52:8
0.63 193:3	1-32 1:2	223:3	52:10 56:22
249:10	1.0 128:5,10	1.25. 144:16	118:9,10
0.96 149:13	143:4 211:18	190:12	144:23 145:7
243:15	260:23 261:1	1.250 220:15	146:2 149:20
0.99 161:13	1.0. 142:5,9,13	1.26 171:9	163:3 165:13
0.99. 189:18	150:1,4 210:20	1.27 218:6	196:19 224:9
001 220:6	1.01 144:16	1.279 220:4	224:11 248:22
01605 1:21	146:5,9 148:19	1.29 251:17	249:2,16,19
02116 2:22	149:25 171:9	1.29. 192:10	250:1 257:11
049 214:5	1.01. 145:21	1.297. 220:13	257:17
05 165:2 192:9	1.03 147:15	1.3 261:5	101 124:19,23
051 214:4	1.04. 243:16	1.3. 181:20	104 5:9
1	1.05 149:11,13	1.31 257:14	11 5:4 44:22,23
1 4:10 6:19 9:7	150:4 192:23	1.32. 147:10	47:21 57:7,9
18:17 48:19	1.08 161:12,16	1.33 127:24	59:13 161:4,12
49:25 56:23	162:4,17	130:24	164:9 168:15
63:1 123:2	1.09 147:2	1.33. 131:16	176:18 177:1
131:19 134:18	150:20 162:14	1.34 255:17	184:17,21
141:20 147:8	176:17 218:6	1.355 220:5	259:14
148:19 150:8	1.09. 162:23	1.36 209:23	11353 291:23
153:23 155:14	1.1 176:14,17	1.37. 147:15	117 5:11 253:11
165:4 209:20	1.1. 181:19	1.42 131:14	12 5:6 85:18
220:22,25,25	1.13 171:9	218:7	86:17 106:7,23
	1.16 149:13	1.44 251:16	127:9,9 144:23
	249:10		145:10 146:2

[12 - 2018]

Page 2

155:4 269:1 12.4 155:5 161:1 1200 241:25 124 221:8 127 5:13 13 5:8 30:11 43:23 44:1 52:7 68:19 104:2,4 129:14 144:23 145:7 146:2 221:1 13,000 186:22 13,421 177:5 184:25 185:20 133 5:15 127:24 138 5:17 14 4:11 5:10 43:25 44:1 52:12 74:18 110:14 111:18 117:12,15 220:10 277:12 277:14,19 289:7,10 1411 248:15 15 5:12 20:17 42:17 57:6 127:3,6 137:3,3 165:13 173:17 226:13 281:25 289:5 15,000 142:19 15th 14:25 16 4:19 5:14 28:24 35:1 42:7	43:15 133:8,10 137:1 159:19 159:21 160:3,5 249:10 16-2738 1:8 293:3 1660 207:20 1663 209:3 212:10 217:19 218:1 1665 209:17,18 1667 214:15 215:19 17 5:16 66:12 121:11 138:5,7 255:22 265:8 281:25 17.4 155:16 170 5:21 1734 122:1 179 5:23 17th 291:22 18 4:12 5:18 122:1 127:15 127:17 128:1 131:2,3,5 154:8 279:8 1800 150:25 1825 2:5 1835 118:6 1837 123:3 1843 118:19 1844 121:21 187 5:25 19 5:20 13:1 29:6 169:25	170:2 196:4,15 227:21 228:3,9 228:10 229:19 230:1 284:9 191 6:5 194 126:18 196 137:15 1986 229:25 19th 61:18,22 2 2 4:11 5:4 13:23 14:1 56:23 57:8 63:1 66:12 133:24 134:1 137:4 140:15 150:8 179:18 179:20 180:9 191:18,22 196:1 197:8 198:19 201:3 220:10,12 221:17 238:10 240:15,20 248:14 253:3 255:1 289:22 2,000 179:3 187:5,6 2,168 150:25 177:8 2.12. 249:10 2.5. 250:3 20 5:22 121:11 144:21,25 145:3 165:14 179:14,16	194:9 216:12 216:12 248:21 248:22 249:2 249:12,16,19 249:25 250:4 253:6 255:20 278:12 20,000 98:9 200,000 16:13 178:19,22 179:9 180:1,21 182:19,20 183:3 184:14 2000 157:7 20006 2:6 2006 204:11 2008 6:15 248:10,12 2013 61:10,14 156:16 193:18 2014 52:15 2016 5:12,22 23:4 91:16 117:24 118:10 126:16,19 127:2 132:17 135:3 178:9 179:15 188:13 188:16,21,25 2018 5:18,24 13:1 16:1 35:1 61:25 64:3 65:6 65:7 66:4 76:14 76:14,15 77:15 154:5,7,21 155:8 163:22
--	---	---	---

[2018 - 30]

Page 3

187:17,22,25 188:10,14,15 188:18 199:10 219:4 223:16 263:16,17,17 263:17,18 272:12 2019 4:19 5:10 6:4,17 12:7 14:17 15:24 16:2,3 25:2,4,8 25:11 26:16 28:22 29:8,15 30:6,18 42:7,18 61:13 66:3 68:12 70:18,22 85:12 117:12 117:14,20 126:8,20 137:16 191:11 191:12 238:5 263:15,15 269:6,8,16 272:11 202.783.6400 2:7 2020 5:16,20 51:22 83:23,24 84:20 136:23 138:3,6 153:21 169:16 170:1 251:6 286:22 2021 5:6 6:6,8 6:10 37:20 86:16,20 206:25 207:4	219:15,18 227:14 2022 6:12 18:20 20:19 37:20 230:18,23 2023 5:4,8 14:25 16:20 43:15 57:8 61:14,25 62:7 64:15 65:5,10 66:4,20 77:1,25 78:20 80:5 83:13 102:23 102:25 103:4,8 104:1,3 115:12 117:18 126:24 159:14 176:24 184:18 190:20 191:15 223:16 231:4 271:20 272:2,12 2024 1:18 5:14 14:4 48:10 133:6,7,12 291:22 292:2 293:19 2027 291:25 207 6:7 2097 166:23 21 5:24 67:1 106:10,19 187:21,23 216:24,25 216 242:3 2168 142:17	219 6:9 22 6:4 48:12,15 191:10,13 198:9,18 199:4 212:18 272:21 284:15,15 2211114836 285:22 227 6:11 23 6:6 49:9 80:3 83:22 102:24 161:6,7 176:20 176:21 207:5 230 6:13,14 23rd 61:19 24 6:8 134:25 177:5 184:24 185:20 219:19 238:7 281:13 281:20,24 247 221:6 248 6:16 25 6:10 42:11 59:14 216:25 227:15 262:3 252 140:6 2527 235:14 2529 236:14 253 188:2,7 2530 255:1 26 6:12 25:7 124:10 230:21 230:24 26.2 123:18 125:17	269 6:18 27 6:14 85:8,14 106:8,19,24 230:22,25 275 4:7 276 6:24 28 6:15 25:13 106:12 108:24 109:13 248:13 291:25 283 7:5 59:9 285 7:7 29 6:17 26:24 83:14,16 84:20 251:17 269:17 29,000 15:6 297 220:5 2a 204:22 2b 204:21 3 3 4:12 18:9 19:19 48:19 79:11 81:10 135:13 144:5,6 147:1 150:8 158:24 194:18 209:17 219:25 220:22 3,000 186:21 3.1. 196:3 3.23. 255:17 3.8 140:14 142:15 143:24 30 6:19 16:23 48:19 131:15
--	---	---	--

[30 - 81]

Page 4

170:6 216:10 249:2,12,19 250:5 268:7 275:24 276:3 288:24 30,000 32:3 33:1,14 30.7 123:12,15 125:16 302 242:3 307 156:24 31 4:13 7:4 283:4,6,11 287:20 310 124:19,23 316 2:13 32 7:6 212:13 285:5,12,13 33 29:1,6 106:13 108:25 109:13 337 137:17 338 137:18 341 127:22 128:15,17 35 286:19 350 206:3 35202 2:14 36 212:15,18 36.5 124:10 363 1:20 37 4:16 376 104:13 38.1 223:5 38.11 220:15	383 105:13,18 105:19 110:22 39 91:15 4 4 1:18 4:13 30:25 31:1 62:6 62:7 98:21 135:13 149:3 191:24 194:16 201:19 238:20 292:2 4.1 98:23 4.4 200:18,18 4.4. 200:20 40 15:1 157:13 238:1 400 190:2 271:10 41 4:18 42 15:8 429 154:25 189:6,13,25 43 253:9 43,000 15:8 440 124:18 45 15:1,6 253:9 266:9,16 47 4:22 156:22 157:8 48 156:22 157:8 49 154:21 5 5 4:14 34:16,18 61:8,9 135:13 149:18 191:15	221:8 231:3 240:21 244:7 50 153:7,9 155:4,8,9,10 198:7 500 2:21 51 253:8 52 4:24 71:6 164:16 53 140:16,20 541 124:18 55 144:5 56 166:1,8,12 57 152:2 58 151:23 153:8 255:20 5:45 290:23 6 6 4:16 37:11,12 219:20,25 220:22,24 260:8,12,13 6.6 160:19 600 13:1 617.573.4862 2:23 62 84:14 63 196:4,13,15 209:6 65 245:20 650 13:3,4 15:6 659 155:16 66 209:5 665 283:23	67 253:9 7 7 4:17 21:1,11 21:12 22:17,21 22:21 41:9,13 41:16 43:2 62:25 74:21 178:13,13 219:20 238:24 239:5,15 256:15,21,22 70 198:7 70,000 15:10 700 2:5 706 242:3 72 59:10 270:17 271:2,10 745 140:6 75 271:24,25 76 147:10 77 84:16,16 229:24 78 255:20 79 229:24 796 52:11 8 8 4:6,19 22:17 41:9 42:8 74:20 88:18,22 89:3 158:24 207:6 207:13 221:5 239:9 80 131:21 81 182:10
--	--	--	---

[82 - adds]

Page 5

<p>82 128:1 131:1 134:16 144:16 85 192:9 850.435.7000 2:15 86 5:7 171:10 89 238:9</p>	<p>172:21 190:12 191:1 202:17 250:3 991 176:13 9:03 1:18</p>	<p>225:22 accordance 122:1 account 43:20 127:16 accurate 293:6 accurately 104:9 128:20 169:12,14 ace 95:25 achieve 179:19 179:23 180:14 180:18 acknowledge 117:2,4,7 233:13 acknowledged 69:4 168:21 acknowledg... 121:22 122:5 acog 4:16 37:12 acog's 38:8 act 6:23 276:2,7 276:20 286:2 289:20 action 280:2 291:19 active 21:25 22:1,9 activities 19:20 actual 42:13 actually 19:17 37:16 41:11 42:4 60:3 64:20 92:6 93:5 136:24 143:15</p>	<p>157:5 165:25 166:6 196:25 197:19 200:13 200:16 218:19 236:1 258:8 269:23 add 158:22 181:24 223:19 added 153:20 160:12,14 adding 181:3 181:13 185:1 223:20 242:3 addition 180:22 259:5 293:7 additional 10:10 11:9 50:10 65:9 78:22 81:18 153:16,17 240:24 280:1 292:19 additionally 277:20 286:5 289:13 address 29:8 158:11 199:4 217:11 230:15 230:17 276:21 addressed 113:24 275:16 addressing 127:22 128:18 239:25 adds 239:5</p>
<p>9</p>	<p>a</p>		
<p>9 4:10,21 41:11 47:21,23 131:19 207:6 207:13 214:24 215:1,15 90 238:9,11,18 239:13 91 196:3,9,12 92 86:11 279:14 279:20 93 191:23 279:14 94 42:9,10 940 190:2 943 189:14 95 141:20 142:4 220:5 251:16 257:14 96 149:11 97 52:12 147:2 98 130:19 200:19 253:11 99 128:21 130:12,19 134:15,16 141:5 161:17 171:10 172:21</p>	<p>a.f. 118:21 a.m. 1:18 aa 209:8 211:9 216:8 aaces 76:12 216:3,9 aaces's 216:14 able 70:12 76:24 195:3 above 240:5 260:23 261:1 285:23 absence 196:19 absolute 97:22 absolutely 262:4 abstract 140:3 234:4,5 244:12 244:15 270:17 270:23,25 academic 25:17 26:5 27:6 63:11 264:12 265:5 accepted 188:16,21 access 57:16,23 163:11 accompanied 169:18 225:1,7</p>		

[adequately - al]

Page 6

adequately 187:9	advised 77:16	45:2 46:8 48:17	237:19 242:9
adjust 90:21 135:14 186:7 246:4 247:12	affect 100:2 135:3 208:4 233:6 270:8 286:4	48:22 49:15,23 50:3 52:21 53:25 54:4,23 54:24 65:18	243:19 248:23 250:13 252:3 257:25 262:19 264:19 265:22
adjusted 96:25 126:10 131:13 144:11,15 147:7 157:9,11 158:1,4,11,17 237:8 242:9 253:13,14 254:19	affects 286:11 affirm 109:12 affirmatively 40:9	66:20 89:14 90:4 91:18 92:18 93:17 95:2 98:2 99:3 99:5,22 104:25	267:5 273:13 274:8 282:19 289:24 290:8 290:13
adjusting 157:12 167:24 247:4	african 208:20 208:25 209:12 209:19 210:3 210:17 211:15 212:17	120:5 121:19 124:13 126:7 134:19 136:15 138:18 139:4 139:11 141:6 141:19 142:3,7	agreed 157:22 282:5
adjustment 125:5 135:19 163:10 182:24 245:11,16 246:2,11 247:18	afternoon 46:19 205:21	142:11 146:8 148:14 149:12 150:18 152:8 152:25 164:13 167:2 170:15 170:20 171:14	agreement 264:7
adjustments 150:13	age 49:14,17,21 49:24,24 110:14 131:13 146:2 157:11 237:9,10 273:25	175:17,19,21 176:4 178:22 182:13 195:2 197:18 200:24 201:25 204:4,8 208:23 209:12 213:12 216:19 217:13 220:16 221:12 223:13 226:17,19 229:13,19	agrees 92:23 ahead 68:15 108:6 236:1 251:12 260:15 266:21 273:16
administration 251:15	agency 276:9 276:10,19,19 279:16	230:10 231:25 232:8,17 234:9 234:23 235:10	al 5:7,9,11,13 5:15,17,25 6:5 6:7,9,13,16,18 7:5,7 74:22 83:18 85:10 86:17 104:2 117:15 127:3 127:15 133:8 133:10 138:7 161:24 177:7 178:18 187:22 191:10,13 207:5 219:18 220:1 230:23 231:4 248:10 248:12 251:14 269:16 283:5 285:11,18
admitted 32:10 53:22 57:17	ages 144:23 145:7 164:5,6		
advance 9:17 12:5 77:25	aggravated 227:6		
adverse 286:10 286:11	aging 21:18 ago 69:21 149:24 240:10 244:8 261:3		
advertisement 121:25 122:7 122:23	agree 28:7 34:9 36:20 38:4,23 39:2,21 44:9,17		

[al - appears]

Page 7

286:20	133:11 134:24	257:23 258:7	238:3 243:2
alcohol 131:23	135:8,13,15,17	258:10,17,21	244:18 247:7
132:2	136:16 143:12	258:24 259:17	247:15 252:25
allen 118:23,24	143:19 145:23	281:16 286:20	258:23 259:25
119:3,18 120:3	157:7,10,15	analysts 251:18	261:24 265:1
american 4:21	158:6 159:6	analytic 250:20	answered 46:1
36:19,25 47:22	160:13 163:6,8	251:12	46:24 71:24
47:24 50:16,22	165:13,13,14	analyze 136:13	75:5 97:11,14
50:25 51:4	165:19,24	angle 17:18	112:14 116:9
161:15 208:21	166:14,25	animal 62:15	148:18 149:16
208:25 209:13	167:13 168:8	92:7,8,18 93:2	151:18 163:22
209:19 210:3	168:23 172:2	93:18,21	174:6 208:7
210:17 211:15	174:18 178:25	204:25 227:2	230:14 232:20
212:17 261:6	181:1 185:8	229:13 230:2	232:22 233:12
amount 112:2	188:10,23	230:10 284:3	243:8 246:8
200:14	189:5,12,15,17	anna 6:15	261:3
amphibole 75:1	190:2,9,10,24	248:12	answering
amy 6:17	191:6 193:5,7	annually 98:10	215:10
269:16	193:22 198:3,8	answer 9:1,5	answers 8:20
analyses 26:10	199:8 200:22	17:15,16,19,21	8:24 59:22
26:11 157:9	211:25 218:17	18:4 30:17	anticancer
165:5,6,16	221:16,23,24	33:21 42:18	32:18
183:21 184:1	226:1 231:5,19	45:21 47:3	anticipated
221:18,22	231:24 232:14	56:18 59:21	81:3
235:10	232:16 234:24	61:20 68:13	anyway 9:2
analysis 44:24	235:2,2,4,8,22	71:8,9 74:2	apologize 37:16
44:25,25 45:1,7	236:2 237:25	75:12 77:10	39:18 92:13
45:8,14,15,17	239:19 245:19	84:15 89:24	103:6 127:5
45:23,24 46:3	246:15 247:17	91:4 97:7 116:7	146:25 153:9
46:13,22 53:23	248:10 250:19	121:6 122:12	195:25 262:22
54:1 65:5,9,21	251:3,19,25	139:18 142:2	appear 165:18
65:24 81:16,16	252:17,19,22	142:24 143:2	210:12
84:5,11 85:7,7	253:2,21,23	148:10 150:11	appearances
85:23 100:3,4	254:20 255:13	163:23 165:12	2:1 3:1
101:25 125:4	256:1,4,9 257:8	169:9,10	appears 54:11
127:24 128:19	257:11,12,20	198:13 206:12	74:4 182:11

[appendix - asbestos]

Page 8

appendix 79:18 80:1,5,22 83:13 83:16 86:11 113:12,18 apples 258:13 application 194:16 245:6,6 applications 148:1 195:3 217:11 231:8 289:19,21 applied 43:22 44:2 54:11 60:6 105:9 206:6,8 227:2 284:19 285:25 applies 193:10 apply 60:2,22 60:23 145:8 199:22 applying 65:3 appraised 64:23,23,24 appreciate 70:11 97:5 110:24 126:25 142:22,23 237:13,14 238:3 248:2 approach 53:24 54:5 62:8,10 63:16,17,19,21 63:25 65:3 253:19 254:7 approaches 63:20	approaching 254:7 appropriate 67:4 74:3,4 85:6 147:25 162:9,10 178:6 190:23 194:23 217:11 222:7 222:10,11,12 approximate 71:5,7 approximately 14:23 15:6,8 16:16 17:9 20:14 25:3 32:21 78:4 112:8 approximations 71:6 april 1:18 6:10 21:20 227:14 291:22 292:2 archive 264:4 area 68:11 72:12 73:19 95:1105:10 170:13 171:13 174:20 266:8 271:14 274:25 275:3 argument 56:9 arms 251:21 arps 2:19 arriving 66:9 artery 32:16	article 5:6,8,10 5:12,14,16,24 6:4,6,8,12,15 6:17 7:4,6 24:12 25:25 55:2 80:17,21 80:24 81:4 82:19 86:16 88:9 98:22 100:21 101:24 102:8 104:1,3 104:15 109:16 112:20,21 113:4,6,12 116:3 117:14 118:10,14 121:23,24 122:3 123:1 126:19 127:2 129:17 130:2,3 130:8 133:7,17 133:20 138:6 138:25 140:21 178:8 179:13 180:3 182:18 182:23 187:22 187:24 191:12 193:12 205:12 207:4,20 214:16 219:18 220:17 222:1 224:4 230:23 231:19 233:5 238:5,21,22 239:1,14 248:12 269:16	269:21 270:9 281:14 283:5 283:12,15,20 285:5,11,14,18 285:22 286:22 286:25 287:3 287:10 articles 23:14 24:7,9,24 25:19 25:24 79:13,16 79:24 81:18,24 81:25 83:3 87:9 103:13 113:13 120:12 226:24 271:24,25 277:20 289:14 asbestos 6:19 6:20 24:6 25:1 29:10 30:9 68:3 68:5,8 69:1,7 72:5,13,22 73:13,23 75:21 76:3,22 93:11 227:6 275:17 275:25 276:1,4 276:5,23 277:3 277:8,16,21,23 278:5,24 279:10,22 280:5,9,13,18 280:24 281:2,3 281:6 284:8 286:12 287:7 289:2,2,15,16 289:18,21,23 290:1,7,15
--	--	--	---

[ascend - attention]

Page 9

ascend 282:12	asking 12:14	assigned 66:21	203:8 205:18
ascertain	17:13 40:12	202:21	214:19 215:2
217:10,15	51:3 71:2 79:4	assigning	216:17 234:19
ascertainment	90:12 125:11	171:21	257:13 261:7
49:3,5	146:5 148:11	assignment	285:6 286:16
ascribe 273:10	181:14 222:2	256:7	287:12
274:6,11	246:5 259:24	assigns 200:7	associations
ascribing	asks 21:12	associate 18:18	90:14 91:12
273:21	145:7	associated 41:1	94:22 99:2
ashcraft 2:3	aspect 176:12	41:2 54:13	149:18 185:15
ashcraftlaw.c...	177:15 194:13	55:22 94:24	187:2 260:18
2:8	aspects 24:22	99:20 100:2	288:12
aside 51:10	assess 132:9,21	105:7 123:21	assume 24:23
110:19 114:4	168:20 203:14	131:14 211:8	47:25 50:15
asked 17:3 21:7	228:21 246:25	212:12 220:3	51:15 91:4
24:9,21 34:25	assessed 132:20	224:21 281:15	130:12 133:13
37:4 45:22,25	assessing	association	189:7
46:23 55:16	195:23 228:4	44:10 50:13	assumed
65:14,15 71:23	228:16,18	55:10 56:1,5	128:19 170:14
75:4 77:15 79:5	229:2	59:23 76:21	assumes 179:3
79:7 92:1 97:10	assessment	81:13 89:10,15	assuming 58:13
112:13 137:15	45:9 47:14	89:21 90:1	120:13 134:15
141:17 145:5	50:20 54:21	91:19 95:3,9	assumption
148:17 149:15	56:11 65:1	96:18,20 118:2	128:23 129:4
151:17 157:20	66:11 67:18,19	133:12 135:21	129:23 130:10
163:21 174:5	67:22,25 75:8	141:13 143:14	130:14,22,23
208:3,6 215:11	75:11,19 85:5	145:22 146:6	assumptions
215:13 223:25	92:24 160:10	147:11,15,17	82:16 131:10
230:13 232:19	176:13 192:19	149:14 151:8	134:17,21
237:15 240:10	192:24 193:10	161:14,15,18	atherosclerosis
246:20 253:24	195:22 206:15	162:4,16 163:1	32:15
254:3,13 261:2	236:17,20,25	167:3,5 171:12	attach 279:5
264:16,21	237:19 262:14	173:24 186:20	attempted
265:2 269:3	262:25 263:1,5	192:15 193:13	240:7
275:14 277:6	267:1 271:13	196:6,17,20	attention 59:1
282:4,8 286:24	278:23 280:11	201:11 202:9	263:13 281:24

[attention - beginning]

Page 10

287:19	37:3 45:22	169:24 175:5	173:22,22
attenuated	46:21 48:6 49:4	176:18 178:12	182:18 194:23
134:22 150:19	51:22,25 68:7	183:2 184:11	201:15 202:6,9
151:1 252:1	88:3 93:21	190:17 192:19	203:2 209:16
attorney	102:8,16	195:10,24,25	222:2 242:20
291:18	103:14 119:5,9	195:25 196:2	247:5 263:8
attributed	121:8,11	213:14 215:8	276:23 280:18
48:23	126:21 132:10	216:21 217:19	281:1 282:11
attrition 109:11	132:16 139:15	219:10 220:22	baseline 156:3
109:11	139:19 207:25	221:11,17	245:10
author 115:21	222:6 228:21	222:14 238:4	bases 112:11
116:3,16	231:18 268:10	238:21 239:11	basing 131:3
118:14	268:10 270:14	243:10,24	212:20 224:2
authority	b	244:7 250:17	basis 81:4
289:20	b 31:2 251:20	253:3 254:24	255:4 278:5
authors 91:5	252:18	254:24 256:13	baylen 2:13
109:15 112:20	baby 35:3	259:9,20 260:6	beasley 118:22
114:5 126:7	71:15	262:2,10	118:24 119:3
134:20 139:12	back 21:6 24:21	270:16 275:7	119:18 120:3
144:6 161:12	26:15,17 28:24	287:18	beat 8:25
168:21 171:15	31:10 34:20	background	becoming 49:3
207:20,22	37:16 41:24	233:24,25	114:15 226:22
210:7 213:12	42:25 44:7,7	234:3,18	281:9
214:3 231:12	53:15 58:4 61:5	balance 163:17	beechwood
236:1 270:15	70:12 79:11	ballman 263:15	1:19
available 241:5	80:8,10 83:12	ballpark 15:3	began 108:2
242:24 243:1	84:20 85:21	16:5	beginning 42:9
264:8 266:25	86:11 98:20	barred 10:6	74:21 97:18
289:17	99:17 101:16	base 198:6,6	104:19 105:4
average 155:16	110:12 115:25	based 23:10	105:14 106:18
180:25 182:13	117:11 123:24	25:19 30:16	111:1,2 128:15
209:14,15	138:2 154:4,9	42:23 50:15	134:1 155:3,7
avoid 39:24	154:10 157:19	57:1 62:15	166:4 188:9
40:4 236:3	161:4,9 163:3	73:24,25 75:8	189:3 202:17
aware 10:1,5	164:16 168:15	75:19 89:20	257:8
23:13,16,17,25		99:15 125:5	

[begins - bottom]

Page 11

<p>begins 42:15 59:11 166:14 174:17 180:14 209:4 behalf 8:7 belabor 8:19 belief 293:7 believe 11:23 18:11 22:18 26:20 39:22 40:25 43:25 47:6,10 53:1 54:12 55:4,11 55:14 58:1 60:1 61:1 64:14 72:24 87:10 90:13 91:17 97:7 108:4,7 113:25 138:9 145:21,23 146:5 149:12 157:20 167:12 167:18 168:7 169:5 182:3 183:5 190:5 196:21 197:22 202:12 203:25 207:7,16 258:23 267:16 273:18 275:20 286:24 believes 44:9 279:20,21 bellwether 274:15</p>	<p>benefit 96:1 benefits 279:21 279:21 berge 5:25 187:17,22,24 188:9 191:6,14 221:2 222:17 223:14 best 8:23 9:15 65:2 93:6 148:1 293:7 better 49:3,5 73:16,17 82:22 148:5,6 194:6 287:9 beyond 12:20 13:6 21:24 280:15 bias 20:7 85:5 87:14,14,17,18 88:1,2,3 104:9 104:23,25 110:6 111:11 112:1,3 113:2 113:24 114:23 114:25,25 116:15 127:16 127:23 128:18 133:10,21 134:12 135:7 152:23 158:20 176:9 187:7 200:2,4,13 201:5,6 204:25 233:13</p>	<p>biased 87:11,13 biases 87:22 big 181:6 biggest 251:6 binders 47:21 52:7 57:7 bindman 231:13,14 263:17 bindman's 232:25 233:23 biologic 55:23 56:9,10,24 62:25 76:13 93:3 162:24 230:6 278:8 biological 66:22 81:19 89:20,24 89:25 90:7,10 90:13,19 92:10 125:10 262:5 262:15 biology 173:15 173:22 birth 38:25 245:7 bit 13:3,19 23:20 64:4 68:10 106:16 118:16 162:2 177:14 189:22 193:20 204:18 252:2 black 251:5 255:10</p>	<p>blah 228:12,12 228:12 257:3,3 257:3 blanket 274:3 board 23:5,9,12 24:8,17,18 261:9 bodies 64:22 body 45:18 47:13 53:8,11 62:12,13 65:16 66:7,9 75:8 85:21,22 86:18 94:4,9,12,13,16 94:25 104:7,17 116:23 123:2 195:8 199:23 206:1 228:5,19 228:22 267:9 275:15 books 25:8,10 booth 239:20 borderline 36:12 boston 2:22 bot 70:24 76:20 bottle 76:23 bottles 70:25 71:2 bottom 43:6 123:3 137:17 140:24 147:3 184:17 188:15 196:12 277:14 279:17,20 289:10</p>
--	---	--	---

[bound - cancer]

Page 12

bound 161:13 161:17 box 79:12 251:5 255:10,19 boxes 251:4,6 boylston 2:21 bradford 53:22 53:25 54:13,16 56:21 62:22 64:5 65:4,9,21 65:24 100:4,21 197:12 break 9:3,5,6 21:5 41:17,20 41:23 58:3 69:8 70:4 83:9,11 98:19,22 115:22,24 117:8,10 138:1 153:11 154:1,3 157:18 169:23 170:4 184:10 184:12 219:6,7 219:9 224:12 248:6,8 262:9 275:6 287:17 287:24 breast 49:15,22 50:4,5 131:13 131:23 brief 219:22 briefly 59:7 109:21 184:9 230:15 272:17 bring 10:10 59:1 60:11	69:23 173:15 195:14 201:10 221:24 222:17 bringing 173:21 brings 15:9 broke 83:14 90:17 broken 36:8 193:23 241:19 248:18 brought 19:14 203:18 buffer 127:16 127:18 131:3 bullet 127:13 191:24 194:2 bullets 127:12 c c 28:3 252:19 calculate 126:8 126:11 178:4 260:3 calculated 137:7 calculation 185:9,13,16,17 190:11,15,19 191:1,9 calculations 178:5 190:22 call 25:16 27:2 27:21 55:12 called 140:7 269:18 278:16	canada 6:10 45:8 63:16 64:16,20 160:10 203:6 203:20 204:7 205:7,20,23 206:24 226:23 227:7,11,14,21 227:23 228:1 230:16 262:2,6 265:9,10,11 266:9 284:13 284:16,17,21 285:3 canada's 260:17 canadian 205:23 canal 229:21 cancer 4:17,21 12:24 22:6,13 22:13 23:1 29:12,15,19,22 30:5,19,22 31:21 35:5,6,10 35:15,18,21,25 36:4,6,9,12,16 37:5,24 38:10 40:7,19 41:1,2 41:15 42:1,17 44:13 45:4 46:9 47:22,24 48:7 49:15,22 50:5 50:14,16,23 51:4 76:4 84:1 85:11 86:19	89:11,16,22 91:13 93:10 94:24 95:16 96:19,24 97:23 97:25 98:23 99:6,13 100:2 100:11 101:1,6 101:18,22 105:14 106:5 106:12 107:10 107:15,23 108:17,18,21 108:23 109:3 110:7 111:10 111:20,22,23 112:9 113:1,4,5 113:11,22 114:13 117:13 118:3 123:8 131:14,23 132:1 133:11 138:24 141:13 142:16,18 143:11 152:12 152:12 154:25 156:6,7,9,11,25 158:25 162:13 163:7 164:12 167:6 168:13 171:13 173:25 174:20 177:4,7 177:10,16 178:8 179:7 184:23 187:5,6 189:13 190:5 192:8,16,20,25
---	--	---	--

[cancer - causal]

Page 13

193:9,11,14	carcinogen	88:24 89:9	128:24 130:11
196:19 202:6	279:23 280:5,9	91:11 96:20	134:16 143:8
203:2,18,22,23	280:13 284:9	98:1,3 117:20	148:25 149:5,8
204:3 208:11	286:12	134:8 135:16	150:19,23,24
214:18 216:8	carcinogenesis	136:8 137:6	150:25 151:2
216:18 220:4	92:9,19 93:18	142:18 156:12	153:17 155:1
226:1,11	94:6 226:15	165:19 177:5	155:16,20,21
231:10 234:7	227:5 282:6,19	181:19 183:12	156:24 157:24
234:21 241:25	282:25	183:20,21	177:4,6 184:23
260:20 266:1	carcinogenic	184:24,25,25	185:6,7,18
267:21,21,24	93:15	185:6,9,14,20	187:4,5,6,13,15
268:13,22	carcinogenicity	185:25 186:18	189:6,6,6,13,14
273:10 274:24	92:7 94:7,9	186:25 187:1,4	189:25 190:2,3
275:17 278:4	205:12	187:9,11	190:3,5 209:8
278:10,25	care 23:7	188:10,24	209:11 241:19
279:12,23,24	261:11	189:18 190:24	241:25 253:9,9
280:10 281:1	carries 26:5,6	197:5,5,9,24	253:11 259:3
281:11,15	111:4	198:9,19,22,23	catch 130:2
282:15 285:8	carrying	199:1,5 209:18	categories
285:20,24	137:17	221:22 222:8	248:18 250:13
286:17 288:5	case 4:24 8:18	222:13 223:11	252:10,11,19
288:19,21	8:25 11:13	231:5 232:11	253:20,22
290:15	13:23 14:3,24	237:20 247:8	254:10
cancers 35:13	20:6 26:25 27:1	257:9,11	category 43:8
36:13 98:9	27:9,14,15,16	260:22 273:10	43:10 80:18
99:10,16,18,23	27:19 28:3,8,15	273:23,23,25	241:24 243:20
105:8 177:17	30:1 31:7,18,24	274:4 277:25	243:21 247:3,6
177:18 245:11	32:13,22 34:22	279:6 280:25	250:4 251:10
265:23 266:5	34:23 35:20	285:15 292:3	252:17 254:8
277:1,17 279:3	45:19 47:2 49:6	cases 33:18	254:15
280:7 288:16	51:13,24 52:9	34:6,10 55:22	causal 12:15
candidly 53:21	53:2,7 55:13,20	57:3 60:21	53:8 56:7,11
191:25	57:10 61:6,12	74:25 79:9 85:5	62:9 63:2,8,12
capital 199:16	74:24 75:3,10	123:7,15 124:3	63:15 64:4 65:8
capture 39:7	75:24 76:4	124:10,18	65:13 66:6,6,9
	81:15 85:22	126:15 128:20	75:2,6,11 81:20

[causal - cites]

Page 14

162:16 168:10 168:12,12 174:1 176:13 176:17 201:11 201:15 202:9 203:8 204:1,2 205:18,18 225:25 267:2 278:2 279:12 280:11 281:4 281:11 causality 45:9 47:14 50:20 68:4 75:7,19 92:25 193:10 195:22 267:22 causally 32:14 35:4 278:3 causation 55:24 90:2,3 206:15 274:24 277:8 cause 46:9 76:3 97:19 98:14 100:25 202:6 203:2,18,22,23 227:3 268:12 277:16 281:1 283:17 284:5 285:20 causes 35:24 36:3,7 49:1 99:10 101:9,11 101:13,17,18 268:21 279:23 280:6 287:6	causing 287:8 caution 273:19 cautious 261:19 cc 293:25 cdc 50:25 51:1 cell 35:25 36:5 193:2,14 266:3 cells 93:8 284:4 cellular 282:15 283:18 center 33:8 certain 6:21 9:15 24:9 47:19 57:3 60:7,21 63:23 276:1,5 276:23 289:3 289:15 certainly 139:18 certainty 202:21 280:4 certificate 291:1 certify 291:5,17 293:6 cervical 229:21 285:7,24 cervix 229:4 chain 278:9 chance 58:17 133:18 165:18 chang 145:13 288:14 change 12:11 131:17 150:14 239:22 292:16	293:9 changed 150:13 150:16 changes 18:15 227:5 293:7 chapters 199:17 characteristic 265:16 characteristics 108:13 109:12 112:6,18 characterizati... 236:8 characterized 98:24 charge 13:2 charged 13:8 charges 13:7 121:24 charging 13:1 chart 80:11 check 70:15 78:12 118:17 chief 24:17,18 choice 251:19 251:21 choices 183:14 250:20 choose 20:22 245:24 choosing 65:15 chose 135:25 222:23 251:25 254:16	christopher 2:12 chronic 32:20 227:3 277:2 279:3 282:13 283:17 284:5 chrysotile 6:20 275:25 276:5 276:22 277:3 278:24 279:22 280:5 289:2 chu 3:3 41:12 ci 220:5 251:17 circulated 43:1 citation 84:18 91:15 257:17 citations 42:20 70:7 74:1 222:14 263:14 263:18,19 264:21 cite 74:14 75:17 75:18 117:18 131:7 181:16 183:25 263:23 284:9 286:17 cited 47:6 68:22 79:23 82:1,5,7 82:8,10,10 87:2 87:4 91:24 161:3 219:20 222:1 225:18 229:20 264:12 281:8 282:21 cites 216:22,22
---	--	--	--

[citing - compare]

Page 15

citing 178:7 187:17 222:4,5 clarification 58:12 clarify 55:16 122:18 148:13 259:12 class 20:15,19 20:20,23 classification 129:18 131:11 145:12 204:10 classified 128:1 128:21,25 130:12 131:1 classroom 19:20 clause 130:7 clear 18:24 20:9 35:25 36:5 36:11 54:22 67:18 80:20 132:2 140:18 146:4 168:6 172:3 191:25 193:2,13,22 196:20 216:2,5 261:24 266:3 clearly 195:12 cleavage 75:23 clinic 40:12 clinical 19:24 20:21 63:5 214:9 cml 32:20	coates 31:14 coded 200:12 coffee 224:17 225:4,13 226:1 226:3,5,7,8 coherence 67:20 cohort 20:6 45:19 46:22 47:1,3 81:14 88:25 89:9 118:5,5 142:14 152:10 153:1 159:20 160:17 177:9 178:19 178:24 179:7 179:10,25 180:19,20 185:11 187:6 188:11,24 189:4,11,16,19 190:1 197:5,10 197:25 199:5 222:9 231:6 257:13,20 259:18 260:16 260:20 cohorts 142:9 142:12 152:13 153:20 179:1 181:7 182:14 183:3,5,6 184:13 coincided 20:21 colette 6:6 207:4	colleagues 148:23 collect 110:14 111:16,17 146:17 collected 145:25 169:2 collecting 26:12 111:13 156:7,8 collectively 262:13 college 36:19 36:25 column 52:15 52:21 53:16,18 110:19,25 111:1 121:22 134:1,5,6,7 136:1 149:8 164:18 166:4 174:17,18 188:9 215:8,19 215:23,24 217:23,24 226:15 235:15 284:2 columns 80:11 80:12,13 combine 183:22 combined 27:16 251:15 come 50:21 82:18 132:17 181:15 185:2 190:12 206:21	264:7 comes 17:10 24:21 54:15 116:24 206:17 comfortable 58:7 coming 27:8 77:23 142:20 252:21 comma 216:11 comment 92:1 184:13 185:4 186:24 218:15 commented 218:14 commission 291:24 common 28:5 28:14 commonly 106:7,24 commonwealth 291:5 community 19:8 266:14,23 267:6 company 114:9 comparable 41:1 124:23 comparatively 239:4 compare 107:13 109:8 155:12 164:8 211:2 213:8 233:23 258:12
---	---	--	---

[compare - consensus]

Page 16

259:23 compared 106:5 131:16 152:10,13 164:12 comparing 109:9 198:22 211:23 251:20 258:16 comparison 165:9 comparisons 165:4 complete 31:3 233:10 completed 22:16 190:24 completely 141:23 172:19 172:20 189:23 components 76:25 94:2,4,9 compound 236:3 comprehensive 28:18 39:5,10 39:13,20 44:5 47:7,10,12 comprise 190:2 comprised 189:5,12 concept 104:22 165:8 concern 152:23 168:24 199:13 223:5	concerning 30:5 concerns 46:16 116:15 conclude 210:7 267:10,10 concluded 141:12 196:5 196:16,19 290:23 concludes 46:9 46:12,16 229:9 concluding 44:3 conclusion 50:19,21 63:15 65:8,13 66:13 75:6 88:20 89:4 92:4 171:10 172:14 196:21 200:5 202:5,9 203:1 205:11 205:16 206:22 213:4,5 226:14 267:3 270:22 270:24 conclusions 63:2,12 69:1 75:2 109:13 112:20 conditions 6:22 85:11 94:24 276:1,6,24 278:25 289:3 289:21	conduct 46:13 65:9 133:2 165:11 236:2 conducted 29:14 42:20 65:4,6 127:23 128:19 134:12 163:5 165:7 199:23 208:16 220:1 231:4 conducting 197:14 270:5 confidence 136:12,17 141:3,20 142:4 142:4,8 143:17 143:22 144:12 146:16,22 149:13 151:6 151:21 191:21 192:9 193:3 197:6,17 201:22 209:20 209:25 210:9 210:13,20,24 211:2,16,19 212:14,20 250:12 251:4 255:15,18,24 256:3 257:14 261:15 confident 202:8 203:7 confidentiality 57:15,22 264:11	confidently 205:17 confined 91:13 confirm 58:2 confirmation 87:18 confirmed 148:24 149:5,8 150:19 confirms 171:10 conflating 189:24 conflict 114:18 121:4 231:18 conflicts 114:6 118:17,19 119:12 121:11 confounder 158:2,5 182:24 200:13 237:9 246:4 confounders 135:14 157:15 158:15 167:25 186:7 245:22 confounding 20:7 94:21 95:3 95:6,10,11,19 96:3,5,6,17,22 96:24 97:1,4 135:16,20 158:19 176:10 187:7 205:1 consensus 266:13,22
--	--	---	--

[consensus - control]

Page 17

267:5,12,16 268:1,5,9 280:15 consider 26:11 47:13,16 95:9 95:10 99:12 100:16 114:20 116:3 121:3,12 121:20 161:16 162:3,17 167:1 174:22 175:24 176:5,9,9 192:14 214:20 218:8,23 260:25 280:17 consideration 21:17 81:23 90:1,2 96:4,4 100:24,25 116:10,13 121:13 126:5 considerations 121:16 135:6 274:14 considered 27:20 95:4,7 102:6 116:8 165:2 166:18 198:7 264:25 considering 167:25 consistence 129:22 consistency 56:23 59:23 67:19 163:2	196:23 197:1,2 197:11,18,20 198:14 211:3 consistent 109:14 121:7 123:20 124:5 167:4 196:21 204:10 211:5 211:16,18 216:16 217:3 260:21 267:3 consistently 55:22 consortium 45:11,11 47:1,1 208:10 consortiums 268:2 constant 28:8 187:3,10 constitute 268:12 consultants 115:2 consultation 78:16 consulted 120:21 consulting 114:9 contact 43:10 contacted 236:1 contain 61:11 68:8 277:21 281:2,3 289:14	290:1,7 containing 76:22 277:21 286:12 289:14 289:21 290:6 contains 68:2 73:23 79:12 86:1 100:11,14 100:16 227:6 280:18,24 contaminated 69:7 279:10 284:8 contamination 287:7 contends 53:24 content 77:9,11 context 62:20 68:14 79:23 82:2,5,10 84:14 84:18 97:6 142:23 143:1,2 146:7 149:17 149:22 160:6 162:10,11,22 162:24 185:11 195:23 200:9 204:19,19,21 214:4,14 234:12,16 288:19 contexts 60:7 contextual 274:14 288:6 contingent 234:25	continue 59:18 174:11 213:19 286:14 continued 279:24 continuing 59:16 221:1,4 contraception 245:18 contraceptive 48:23 164:4 237:11 274:1 contracts 22:17 contradicting 110:17 contrary 54:9 54:10 contrast 216:3 216:9 contribute 55:24 255:9 285:24 contributing 143:18 251:24 255:25 contributor 159:8 control 6:23 20:6 38:25 45:19 47:2 53:7 81:15 85:22 88:25 89:9 91:11 117:20 131:10 134:8 135:16 142:18 177:5 181:19
--	---	--	---

[control - covid]

Page 18

183:12,20,22 184:24,25 185:6,10,14,20 186:18,25 187:1,4,9,11 188:24 197:10 197:24 198:19 198:22,23 199:1,5 202:23 203:15 221:23 222:9,13 223:11 231:6 237:21 245:7 245:22 247:8 257:9,11 260:22 276:2,6 276:20 289:20 controlled 188:10 189:18 197:5,6 controls 123:18 124:4,11,18 126:15 128:1 128:20 131:1 131:18 134:17 190:4 198:10 209:9,11 253:9 253:10,11 copy 69:25 70:1 70:10,12 103:17,18 138:11 188:3 207:18 221:5 272:19,23 283:7 285:10 292:12	copyright 188:16,18 cornstarch 94:5,12,16 correct 8:12,15 8:16 9:9,13,19 10:9 11:5 15:12 15:20 19:23 23:7,8,11,23 25:7 26:23 36:10,23 37:21 38:7 42:24 43:16,20 46:10 47:8 48:1 50:11 51:14,18 52:24 54:3 58:11,25 59:15 61:14 62:3 76:5 84:5 84:6 86:23 105:2 117:19 117:22 123:8 123:22 124:5 124:11 126:11 132:4 134:10 136:6 140:20 141:2 142:6,10 144:1,4,15 145:15 147:12 147:16 148:25 152:3 153:3,6 155:18 157:3,6 160:21 164:15 166:21 167:7 180:5,23 183:25 184:15 188:20 192:12	208:21 209:2 213:15 225:3 225:11 226:12 229:15,22 232:5 235:23 241:18,22 242:7 243:7 247:11,20,21 248:25 249:14 249:18,21 250:7,16 252:12 255:2 257:18,22 260:24 261:13 263:22 265:5 275:19,21,22 276:17 281:3 284:14 286:10 288:1,5 291:15 291:21 correction 165:14 292:17 293:9 corrections 293:7 correctly 127:25 128:24 130:11 131:1 131:18 correlated 253:17 correlation 252:20 correspondence 28:20,21	corresponding 218:7 cosmetic 68:2 132:3 221:9 290:17 cost 122:19 costs 121:22 122:25 cote 12:1 counsel 10:7 11:1,3,4 13:8 21:9 39:23 40:4 77:9 79:2 277:6 282:3,10 285:9 287:14 292:8 292:13,23 count 29:1 220:20 counterargu... 218:19 couple 18:15 69:20 208:3 276:15 287:15 course 19:21,25 20:2 67:12 75:17 77:17 150:25 court 1:3 4:23 8:21 52:9,21 77:16 129:25 274:21 293:1 covered 57:15 57:21 163:22 covid 25:25 51:1
---	--	--	---

[cramer - day]

Page 19

cramer 5:13 91:16,18 117:24 118:10 118:13,23 119:5,18 121:3 126:15,16,16 126:19 127:2 127:15 128:14 129:23 130:8 130:10 133:21 134:11,21 135:3 136:25 137:1 138:23 162:1 163:18 194:23 246:25 251:6,8 255:4,8 255:20 cramer's 118:25 163:25 creation 18:25 credibility 17:9 18:6 criteria 53:22 53:25 54:8,14 54:17 55:13,19 61:3 64:5 81:8 85:4 96:17 243:22 244:13 244:21,24 245:2 246:1,7 248:24 249:5 252:5 258:25 259:6 criterion 100:3 critical 83:25 84:23,25 244:4	criticism 153:4 criticisms 42:21 43:18 153:1 cross 250:12 crosses 141:20 142:5,9 209:20 crude 242:9 csr 1:24 ctisi 2:16 cumulative 53:11 62:13 current 18:11 18:12 267:1,11 currently 29:23 40:4 92:8,18 curriculum 4:12 18:9 curve 136:14 cut 225:15 cv 18:8,10 21:11 25:6 26:15 29:5 200:17 cycles 156:15 cytokines 282:17	daily 216:11 241:3,20,23 242:8,10 243:20 dana 5:20 170:1 daniel 5:12 127:2 data 25:20 26:13 44:9 57:2 67:10 80:25 81:12,13,18,25 82:4 84:7,8,10 84:17 85:6 86:1 88:24 89:8 91:11 92:7 94:7 96:12 97:12 101:25 102:3 105:5 112:16 112:16 113:1,3 113:11,21 117:23 118:2 121:14 129:11 129:13 130:16 130:20 131:15 136:4,13 144:16,18 145:25 146:17 153:16,21 156:7,8,14,19 162:22 169:1 173:19 183:13 191:25 192:15 192:20 193:25 200:7 201:2,8 201:11 202:10	203:6 204:13 204:24,25 214:6,7,14 215:14 217:2 218:10,11 235:4 236:2,5,9 236:11 240:24 241:5,6,7,8,16 241:16 242:14 243:4 244:9,20 245:3,24 247:1 247:4 252:21 253:17,25 254:4,12,18 258:9,10,14,16 259:6,10,11 261:22,22 263:4 267:1,11 274:5 date 14:18,24 45:3,5 46:4,6 47:10,15 57:13 292:2,21 dated 291:22 dates 46:2 61:23 62:5 66:3 85:2 daubert 32:10 57:18 davis 6:7 98:12 206:25 207:4 207:13,17,20 208:4 215:19 davis's 216:19 day 291:22 293:19
	d 4:1 5:1 6:1 7:1 135:13 252:19 285:9 d'aloisio 285:8 d.c. 2:6 d.w. 118:23		

[days - determined]

Page 20

days 20:21	defined 63:18	deposition 1:16	design 28:19
deals 27:14	144:20,22,25	4:10 9:7,18,22	81:22 191:2,3
decades 53:5,6	145:3 146:20	10:20 11:14,22	197:12 198:16
197:15	231:8 245:11	11:25 12:5,6,10	198:24 223:22
december 29:6	258:20	14:4,21 15:11	designed
102:25 103:3	defrayed	15:19,24 16:3	203:14,16
decide 47:17	121:23 122:20	18:16 19:22	designs 20:5
60:20	degree 131:20	22:10,19,20	28:6,9 44:4
decided 235:4	132:9,21 280:4	23:4 29:1 31:7	81:14 187:1
decision 38:8	demonstrable	32:10 34:8 37:1	197:4 247:8
40:13 56:4,12	171:11 172:15	37:5 39:22	despite 198:14
199:21 201:12	demonstrate	41:14 42:1,5,10	198:15 201:2
201:14	195:4	42:22 51:23	202:21 203:25
decisions	demonstrates	57:10,12 59:9	210:4,14
199:25	149:13	64:13 68:12	detail 261:8
declare 291:20	demonstrating	69:13 75:22	detailed 106:9
declared 33:25	177:8 289:18	76:1 77:23	206:4
declined 48:18	denominator	79:14 126:20	details 118:8
150:23,24	181:13 183:19	126:22 133:2	206:20
declining 49:8	denotes 80:23	137:16 138:4	detect 143:10
decrease	department	184:3 193:21	151:8 152:11
135:20 182:11	19:8,9 21:20	208:2 290:23	177:9,24
decreased	depend 273:24	292:13,16	178:20 182:19
48:24 107:24	dependent	depositions	185:15 187:2
decreases 113:4	235:3	11:17 58:9	189:16 190:9
deemed 82:1	depending 88:1	78:23	detected 230:3
defendants	depends 55:25	deposits 277:20	detecting
2:25 120:21	149:17,21	289:13 290:5	186:20
defense 72:14	158:15 194:25	derived 102:4	determination
72:21 116:16	214:4	describe 28:2	56:7 232:6
116:20	deponent	described 85:21	278:23
define 62:1,9	292:10	118:8 280:21	determinations
82:5 144:19	deposed 8:17	287:9	63:8 201:15
201:20 243:25	19:13 34:12	description	determined
258:11	deposited 284:4	115:19 278:16	267:1

[developed - discussed]

Page 21

developed 156:5 174:20	differences 99:2 111:12	265:15,19,22 265:23,25,25	171:15,16 176:3 189:21
development 32:15 204:3 278:3 282:15	171:8 173:11 173:14 198:14 198:15 214:19	266:2,3,4,5 267:12,13 282:21	189:23 282:20 disagreed 51:1 282:5
devices 245:8	214:23	differential 63:6	disclaimer 43:10 122:2,6,8 122:19
devoted 225:19	different 17:18 27:7,18 81:22 87:15,22 94:15 101:9,11,13,21 102:8 106:22 108:10 112:3 112:11,12 125:19 132:24 134:20 136:17 136:18,21 144:7 145:4 150:12 163:25 164:1,5,6 165:12 169:12 172:1,10,20 178:25 179:1 181:21 183:22 185:2 189:24 193:9 197:3,4 197:13,14 201:24 205:5 210:8,15 211:24,25 213:21 216:14 218:18,24,25 223:22 226:3 246:1 252:12 252:19 253:20 258:15 264:14 264:19,20	differently 63:18 88:16 144:20 differs 104:11 difficult 43:14 77:14 139:23 diffraction 73:1 dig 92:2 direct 113:1 159:17 200:3 214:8 245:5 281:24 287:19 direction 109:17 directions 175:9 directly 92:10 286:1 288:4 directness 200:12 disaggregate 76:24 99:19 193:8 254:9 disaggregating 76:21 disagree 38:8 50:15,23 51:3 97:1 98:2,4,5 110:9 112:19	disclose 114:6 120:16,17 disclosed 231:16 232:8 233:18 disclosure 115:9 118:18 119:12 120:12 120:13,14,15 122:5 232:16 233:10 disclosures 208:9 232:7 disconnect 269:12 discuss 8:9 11:2 46:15 132:25 142:14 165:23 184:3 185:21 215:6,14 230:7 246:17 284:18 discussed 113:23 126:21 132:19 135:10 142:17 146:10 180:4 184:2 194:13 230:1,6 231:2 239:17

[discussed - driving]

Page 22

242:5 247:24 discusses 41:5 113:2 215:17 discussing 98:22 160:9 184:12 286:21 discussion 77:20 78:3,8,10 78:17 90:13 105:21,23 112:25 126:19 127:20,22 151:22 160:6 163:4 166:1 224:9 261:4 262:6 284:12 discussions 77:6,9,12 78:5 disease 26:1 28:5,8,13,15 32:16 95:21 265:18 diseases 28:14 28:14 137:22 224:22 disentangled 225:12 dispute 280:15 distinct 26:8 27:13 distinction 26:2 27:6,9 70:24 82:9,14 distinctions 27:5	distinctive 265:17 distinguish 25:18 distribution 134:14 135:25 136:1,2,3,9 292:8 distributions 136:9,11,14 district 1:3,4 293:1,1 division 18:18 18:25 doctor 9:8 26:22 29:5 159:20 document 6:11 6:24 9:8,11 37:14 42:3,11 42:15,16 43:9 48:7,10 59:10 59:25 60:10 85:20 88:18 117:16 138:9 227:14 268:20 272:9,15 276:3 288:23 documents 9:15,16,23 10:15 62:18,18 78:19,20,22 102:7 264:8 272:6,13 doing 19:5 21:25 114:9	135:7 181:2 185:16 236:16 248:2 256:11 dollars 16:9 door 157:17 dose 60:21,23 61:1 63:1 66:21 67:4,14,14,16 67:21,24 147:23,25 162:25 195:4,8 195:9,23 214:16,20 215:14,21 216:2,5,15,17 217:12,14 251:22 262:23 doses 60:25 douching 85:10 102:10 103:9 105:12 117:12 285:6 dr 11:22,25 12:1 44:25 52:17 53:19,21 54:7,16,24 55:4 59:1 68:16,24 87:8,8 91:5 100:7 118:13 118:25 119:5 119:18 121:3,4 129:23,24 130:10 134:21 138:17,18,23 141:11 142:22 148:23 161:24	162:1 166:24 173:20 177:12 207:19,25 208:13 226:23 229:12 231:14 232:25 233:23 237:13 240:23 253:24 254:3 254:11,17 259:5 275:8,10 275:14 281:12 282:22 283:11 285:13 287:3 288:8 dr.singh. 8:6 drafted 77:1,7 78:2 drafting 77:25 102:14 272:2,3 draw 63:2,12 63:14 75:2 150:4 213:20 213:22 214:12 214:13 263:13 drawing 75:6 82:9 213:15 drawn 112:20 drinking 226:2 drive 75:11 driven 53:23 54:1 143:21 256:2 driving 56:11 67:18 111:11 114:24 143:23 144:2 146:18
---	--	---	---

[driving - enhanced]

Page 23

171:23 223:25 251:8 278:22 drop 131:19 dropbox 10:17 70:9,14 103:13 103:14 285:2 dropout 108:13 108:15 dropouts 108:12 dropped 108:5 108:8 dropping 108:19 drs 72:7 74:6 162:1 167:10 280:22 drug 23:6,13,18 32:17,18 60:22 60:25 203:14 251:20 261:11 drugs 25:25 95:24 due 156:11 165:4 duly 8:2 duplicate 80:25 118:1 duplicated 52:16 duration 144:9 179:8 183:14 194:1,15 195:13,13 214:17 216:7 216:11 217:10	248:17 e e 4:1 5:1,14 6:1 7:1 28:3,3 133:7 e.g. 180:1,20 e1 283:23 earlier 51:17 90:21 99:9 103:2 110:8 121:6 138:18 146:10 150:20 159:7 161:10 163:18 166:18 182:2 189:3 202:23 203:4 238:5 247:12 247:13 259:10 277:5 279:7,15 280:20 284:12 289:8 early 181:25 182:1 easier 233:18 eastern 118:4 easy 8:21 192:13 eating 162:13 editor 24:1,5,15 24:16,18,20 editorial 5:21 23:5,9,12 24:8 24:17,18 25:23 26:2 169:17 170:1,3,5 261:9	editorials 25:22 editors 283:15 edizioni 269:19 269:24 educational 25:15,23 26:7 26:16 effect 104:10 111:12 149:19 174:21 175:19 175:24 176:4,9 176:12,16,17 178:20 192:7 193:2 201:23 201:23,25 267:2 284:7 effects 92:11 96:2 133:21 286:6,8 efficacy 95:24 efficiency 185:14 egg 224:17 225:13 eggs 225:5 226:7,8 either 10:16 24:4 56:8 57:2 57:24 81:20 87:7 113:5 114:8 120:15 139:13 151:8 223:15 235:6 elevated 128:10 172:1 212:3,23 224:22 260:21	260:22 261:1 elevation 282:16 eligibility 81:8 244:21 eligible 251:1 emerging 278:6 emphasis 52:22 emphasize 165:22 emphasized 53:9 empirically 129:5,9 employee 291:18 employees 139:15 encephalopathy 28:3 encouraging 282:19 ended 74:10 endometrial 192:21 267:21 endometrioid 266:2 endometriosis 257:2 endpoint 278:22 english 129:8 enhance 224:17 225:5 enhanced 225:22
--	--	--	--

[enhances - et]

Page 24

enhances 278:7	289:17 290:14	213:15 220:7	195:3 201:23
enrolled 178:19	epa's 268:21	equate 170:8	201:24 209:19
enrollment	278:22 290:10	205:2	209:24 210:17
106:7,8,13,24	epidemiologic	errata 292:9,12	212:23 222:7
107:20 108:25	62:16 81:8 95:9	292:17,21	223:8 234:19
110:5,13,16	164:10 206:15	error 104:9	251:12 255:9
111:9,18 118:8	epidemiologi...	287:22	260:23,25
entail 20:2	86:20 88:24	errors 165:4	estimates
entails 20:4	89:8 105:1	especially	104:10 107:13
enter 286:1	266:24 286:15	104:10 247:12	108:17 111:12
entirely 117:25	epidemiologist	esq 2:4,12,20	134:13 146:18
125:7 126:1	176:5	292:10,12	150:14 151:7
136:6 156:18	epidemiologi...	293:25	182:10 197:3,7
172:16 173:23	69:3 174:22	essentially	198:15,25
174:1 218:20	175:24 176:8	24:12	210:7,11,15,23
284:14	epidemiology	establish	218:25 219:1,3
entirety 15:17	19:24 201:15	174:13,15	223:4 239:21
241:6	epithelial 35:14	230:9	249:6 251:8
entitled 83:25	35:15,17,21	established	252:4
84:21,23	36:4,6,7,13	87:25 97:8	estimation
102:10 276:4	93:8 99:6,10,23	101:15 174:4	17:22
281:14 285:5	100:11 192:19	268:1	estimations
environmental	192:24 193:10	estimate 14:23	194:19
276:9,18	227:3 260:19	15:22 16:4	estrogen
epa 6:19 68:25	266:1 284:4	98:12 131:6	224:20
69:10,15,15,19	epithelium	136:19 137:11	et 5:7,9,11,13
74:1,9,16 78:24	265:21	137:12 140:25	5:15,17,25 6:5
78:24 268:17	equal 116:14	141:4 142:12	6:7,9,13,16,18
268:19 275:21	216:12 231:9	143:4 144:3	7:5,7 74:22
275:25 276:4	248:21,22	145:21 146:9	83:18 85:9
276:19 277:5,7	249:1,16	146:10,22	86:16 104:1
277:19,22	equally 167:2	147:20 148:15	117:14 127:2
278:14 279:5	equals 177:5,8	151:11,14,16	127:15 133:7
279:14,20,21	184:24 185:20	159:9 178:18	133:10 138:6
280:11 281:8	196:4,15	181:17 192:7	161:24 177:7
288:23 289:15	212:23 213:3	193:2 194:10	178:18 187:22

[et - excluding]

Page 25

191:10,12	evaluating	213:2,5,13	example 28:2
207:4 219:18	100:17 114:20	220:6 226:21	40:18,19 41:4
220:1 230:23	121:5 162:15	227:1 229:8	56:10 60:21
231:4 248:10	163:6	231:23 232:11	66:11 67:8 69:5
248:12 251:14	evaluation	262:17 266:25	76:11 78:22
269:16 283:5	116:2 202:22	267:10 278:5,8	80:24 82:15,17
285:11,18	218:9 289:22	278:9 284:13	82:21,22 84:13
286:20	289:25	evolving 246:24	93:6 99:17
ethnic 253:13	evaluations	exact 15:2 29:2	107:8 110:12
etiologic 101:2	290:4	46:6 53:6 101:5	145:25 158:22
101:8,11,20,22	evening 11:1	137:15 214:24	162:13 186:14
158:21,24	events 93:9	217:17	237:6,7 240:12
235:24 245:22	284:6	exactly 19:2	246:24 253:5
250:23	everybody	39:14 53:14	255:16 266:2
etiologically	235:7 267:19	56:3 58:19 64:1	282:17
142:16 143:9	evidence 23:10	64:19 71:4 82:6	examples
165:20 167:21	45:19 47:13	84:13 91:2	176:15 264:1
177:19,21	50:13,19 53:3,8	120:7 131:4	264:22
179:1 181:3,22	53:11 57:4 62:8	181:2 240:4	exceeds 185:7
182:17,21	62:10,11,12,14	256:8 264:9	excess 163:9
183:16 186:8	62:24 63:17,19	282:23 284:6	exclude 47:17
242:22 243:5	64:22 65:3,7,12	examination	80:12,13,18
247:3 251:23	65:17 66:8,9	4:5 8:4 275:12	101:24 239:25
etiology 100:25	67:20 68:7 69:3	291:12	240:14 246:2
eval 94:18	69:5 74:13 75:8	examine 93:1,2	excluded 47:18
evaluate 116:25	86:20 89:20	115:8 143:21	51:24 52:1,21
133:20 206:22	141:10 161:13	157:7 208:20	79:19,22 80:14
264:24 288:3,4	174:25 195:8,9	211:2 233:12	80:19,22 81:23
evaluated	197:8,20,21,23	examined 8:3	83:3 84:16,19
43:22 50:21	198:2,11,13,14	68:11 81:17	102:6 113:13
66:2 67:14	199:21,23	105:5 113:20	113:18 239:19
94:11,13,16	200:3,24	231:6	239:21 245:25
99:11 183:3	201:13 202:7	examining 62:8	251:13
192:18 208:4	203:3 205:14	62:19,21 76:20	excluding 81:4
223:21 233:9	205:17 206:19	197:11	116:22 247:13
238:14 289:22	211:12 212:18		251:14

[exclusion - exposure]

Page 26

exclusion 85:5 245:21	187:21,23 191:10,13	77:1 87:5 102:14 114:7,9	199:18 203:10 239:18 251:1
excuse 95:6 152:7 155:13 191:14 220:4 248:21 272:12 285:19 286:7 289:6	207:3,5 219:17 219:19 227:15 230:21,22,24 230:25 241:13 248:11,13 256:15,22 269:17 275:24	114:15 115:1 115:12 116:2,4 116:16 118:22 118:23,25 119:6 120:17 121:5 126:24 127:10 133:14 141:24 152:15	252:15,16 258:2 263:6 explained 80:21 261:7
exercise 240:18	276:3 281:13 281:18,20,23 283:4,6,11 285:5,12,13 287:20 288:24	154:5 167:18 207:7 208:1,5 219:21,25 222:2,3,24 231:14 233:11 263:19,23 269:22	explains 82:20 explanation 189:19 190:25
exhaustively 261:3	exhibits 1:2 7:9 72:16	expertise 266:8 271:14 274:25 275:3	explicate 204:23 245:20
exhibit 4:9,10 4:11,12,13,14 4:16,17,19,21 4:23 5:3,4,6,8 5:10,12,14,16 5:18,20,22,24 6:3,4,6,8,10,12 6:14,15,17,19 7:3,4,6 9:7,10 13:23 14:1 18:9 30:25 31:1,2,3 34:15,18 37:11 37:12 41:13,16 42:6,8,17 47:20 47:23 52:8,10 57:6,7,9 61:8 85:16 86:17 88:9 104:2,4 114:2 117:12 117:15 127:3,4 129:14 133:8,9 136:22 138:5,7 154:5,8 169:21 169:25 170:2 179:14,16	exist 77:12 existence 132:17 existing 20:23 188:11,25 expect 123:21 experience 114:5 274:4 experimental 67:10 92:6,9,19 93:2,7,12,13 287:4 experiments 67:9 271:8 expert 4:14 8:9 12:15,21 25:24 31:2 32:9 33:17 33:25 34:5,11 34:17,21,22,25 51:11 72:12,22	207:7 208:1,5 219:21,25 222:2,3,24 231:14 233:11 263:19,23 269:22 expert 266:8 271:14 274:25 275:3 experts 11:17 11:20 72:14 74:2 116:13,20 116:21 139:12 expire 112:9 expired 107:10 112:17 expires 291:24 explain 21:13 23:20 25:14 26:25 41:5 82:13,22 84:18 84:21,24 94:21 101:10 124:25 143:3 165:8 170:11 177:14	explicit 120:19 135:12 283:22 explicitly 117:7 120:5 215:16 245:15,17 246:11 exploratory 165:6,21 166:1 166:19 167:1 167:13 168:3,8 168:11,14 exposed 130:11 189:13 190:6 exposure 44:11 50:14 74:25 76:3 95:13 96:20 98:7 102:11 103:11 111:13 124:4 129:3 140:10 143:9 145:12 146:20 150:16 156:5 167:22 170:9,10 171:1 171:3 177:22

[exposure - final]

Page 27

179:2 181:23	f	246:12 277:17	features 265:17
183:14 185:12	facilitate 264:9	281:14	february 5:4
185:15 187:16	fact 69:3 70:9	facts 48:7	57:8
192:16 194:13	95:22 100:1,10	fair 21:23 30:16	federal 52:11
194:14 195:19	100:14,16	40:15 42:21	274:16
196:17,18	101:4,7 115:21	47:5 65:22 78:8	feel 65:8 73:11
231:7 239:4	118:13 119:11	fall 289:19	fell 128:1 131:1
241:3 245:5	120:8 121:14	fallop 242:14	felt 65:23 66:5
247:3,6 250:24	121:14,17	fallopian 169:6	242:21,22
251:23 253:21	122:2,25 124:3	169:7 241:9,17	female 39:23
254:8,10,15	124:25 145:11	242:6,11,15	40:4 265:20
256:18 257:7	158:3 171:5,7	244:9 265:21	feminine 105:7
262:13 263:8	185:13,18	familiar 47:24	129:19
270:21 277:2	187:15 190:22	75:23 133:16	fewer 116:14
277:23 279:1,3	192:23 200:6	139:1,3 169:17	fiber 75:1
280:1 285:20	206:22 210:14	187:24 200:15	fibroids 69:6
289:17 290:8	224:7 227:22	206:15,16,25	93:6 288:1,17
exposures	228:25 231:17	family 19:8	fibrous 76:17
94:23 107:2	262:25 280:13	23:7 40:22	76:22
extend 194:16	280:17,18	49:14,22 50:4	figure 221:21
extent 10:6	281:2 288:9,17	261:11 274:1	255:1
12:2,9 33:20	factor 38:9	far 10:19 34:8	figures 48:7
35:21 63:2,11	49:14,16 66:21	87:16 105:25	file 9:24 10:5
72:11 115:6	67:5 96:14 99:1	139:14	filed 9:22
129:2 186:11	114:22,23,24	fast 130:1	filing 58:24
195:2 270:11	115:3,3 204:2	fat 224:17	final 37:18 43:5
276:21 281:5	factors 37:24	225:5,13 226:7	74:20,21
external 132:8	39:7,7,17 40:14	226:9	104:19 128:16
132:11,11,16	41:5 49:11	favors 202:22	164:18 166:12
282:12	50:10 66:23	fda 68:22 70:17	180:13 196:3
externally	67:5,13,18	70:18,21 71:15	226:13 234:17
284:19	98:15 101:6,15	74:14,15	250:4 260:8,11
extreme 214:7	114:22 125:6	120:16 229:9	262:11,12
261:23	162:12 163:10	229:11 280:22	266:11,18
	224:6,16,24	fda's 73:18	269:10 270:2
			271:18 276:12

[final - footnote]

Page 28

276:19 277:8 finally 56:7 financial 88:2,3 financially 87:15 291:19 find 55:7 68:17 81:17 82:22 88:15 197:8 217:6 221:23 228:11 229:6 229:21 247:2 256:16,20,20 272:20 finding 125:25 165:5 166:18 166:20 257:25 findings 70:18 87:19,20 115:5 125:9 166:25 211:5 229:9 258:6 259:19 fine 15:3 109:9 169:10 188:19 206:13 finer 86:5 finish 8:23,24 109:25 124:21 124:22 167:8 178:3 215:10 262:21 finished 178:2 finken 3:5 21:7 fired 269:12 firm 118:23,24 213:15	first 18:17 20:4 20:9,10,11 21:12 25:7,13 26:25 30:15 34:24 44:8 49:13 52:14,20 54:24 71:3 95:2 95:18 97:16,20 98:23 104:13 104:14 108:8 110:20 111:3 118:6 125:14 126:19,22 134:6 135:5 136:1 140:2,3 140:24 147:1 155:7 156:19 157:14 158:1 162:16 163:11 164:9,18 166:12 167:22 170:6 174:17 175:1,4 178:14 179:17,18,21 180:11,12 186:25 188:8,9 189:9,22 196:3 209:3 215:20 215:24 217:23 217:24 224:8 224:13,15 225:25 228:2 228:15 231:3 231:11 233:24 235:14 238:13 247:2 248:20	248:20 252:2 253:8 258:3 263:14 264:17 266:11,19 270:16 276:14 277:15 278:20 284:1,17 287:2 288:24 five 145:13,14 195:17 216:25 216:25 217:3 260:10,16 268:6 fixing 61:15 flawed 145:24 191:8,8 fletcher 269:6 flip 21:1 28:24 38:17 164:9 217:19 238:21 239:11 289:5 flipping 86:12 flom 2:19 florida 2:14 focus 93:17 113:6 141:16 142:23 145:18 203:17 237:14 290:9 focused 35:21 122:4,5 125:4 289:25 focusing 82:3 193:24 290:15 follow 46:2 58:5 106:9,15	106:19 109:1 110:5,16 111:9 112:10 140:11 142:15 143:3 143:10,24 152:8 153:5,17 153:19 155:5 155:17,20,22 156:1 158:22 158:23,24 159:6,13,24 160:1,6,11,12 160:14,20 177:17,18,20 177:20 179:5,8 179:10 180:4 180:22,25 181:4,4,7,8,10 181:23,24,25 181:25 182:12 182:13,17,20 182:24 183:15 258:22 259:24 275:11 followed 179:12 following 41:10 105:4 107:17 179:4 181:6 202:16 229:19 272:11 282:11 293:7 follows 8:3 80:6 91:11 footnote 156:2 201:19 240:21
---	--	--	---

[footnote - further]

Page 29

241:15 244:7 253:13 foregoing 291:6 291:15,21 293:6 forest 251:3 254:25 255:1 forget 148:5 form 12:12 16:6,10,14,18 16:24 17:6,24 25:9 26:21 27:22 28:10,17 30:7 31:25 32:4 32:23 33:5,15 35:19 36:17,22 40:10,17 44:12 44:14 46:11,23 47:11 48:25 50:1,24 52:25 54:2 55:1 56:15 64:17 65:11 67:6 71:17 87:12 88:5 89:17 90:16 91:21 92:20 96:11 100:5 107:4 116:5 117:5 119:15 120:10,22 123:23 128:11 129:1,7 130:15 146:11 147:13 162:5,18 163:13 169:8 173:8 176:1,7	190:16 195:6 206:9 209:1 211:22 213:1 213:18 225:24 229:17 232:4 235:12 239:2 242:1,17 243:23 252:14 254:1,5 263:25 267:7 268:14 271:5 273:15 290:2 formal 18:25 190:14 formation 115:16 forming 272:10 forms 73:13 87:15 forth 154:10 291:7 forthcoming 29:18 30:21 forward 38:17 found 75:9 131:13 224:3 228:25 229:1 245:24 257:13 268:11 280:12 280:21,22,23 four 22:18 31:4 33:18 51:15 53:5,5 74:25 106:1 160:12 160:13 178:25 220:16,20,21	221:12,16,24 222:14 223:13 235:15 252:4,8 252:9,19 fourth 105:15 106:9 107:18 107:19,21 108:8 127:12 fouth 33:7 fragments 75:24 framework 199:16,20 200:16 203:13 frameworks 199:19 frequency 45:18 144:8 145:16,17 148:7 183:15 194:15 195:12 195:13,18 214:17,24,25 215:2 216:6,7 216:10 217:10 242:20 248:17 258:9,11,19,19 258:25 259:22 260:4 frequent 147:14 150:17 209:10 231:7 234:8,14,19 235:25 241:20 243:14,17,21	frequently 37:4 145:9 174:21 209:14 210:4 front 34:19 48:9 86:7,14 frontiers 23:6,6 23:13,17,21 261:10,11 frowned 190:22 fruits 149:19 162:14 fulfill 96:16 full 39:5 52:3 62:1 78:25 106:6,10,17 107:14,18 110:18 164:10 170:6 178:14 179:18,21 180:11,12 201:9 215:20 228:3,15 233:25 235:14 260:8 fulsome 262:14 263:1 function 186:4 186:5 187:12 187:14 funded 21:19 funding 21:24 114:25 120:15 233:13 270:4 further 80:10 134:22 203:7 204:5 227:5
---	---	--	--

[further - going]

Page 30

251:12 254:16 275:8 278:7,9 282:14 287:13 290:20 291:17 furthermore 214:16 future 290:4	89:22 94:14,19 95:1 102:10 103:9 105:9 106:4,13,14 108:24 109:1 111:9,13 123:15 124:4 124:11 125:3 129:19 137:8 167:5 170:13 170:25 171:13 189:14 209:10 212:9 214:18 214:25 215:3 216:7,13,18 246:16 260:19 273:19,21 285:6,23 286:16 288:5	143:1 152:20 159:15 166:13 168:25 176:2 178:15 186:14 207:8,8 210:1 211:6 217:23 230:2 237:7 238:19 239:14 243:25 244:17 254:18 272:19 given 11:17 30:4,4,12 31:4 60:22,25 65:23 97:23,24 170:18 238:25 279:6 gives 151:20 giving 51:11 64:2,7 68:14,15 237:20 glad 183:20 go 26:17 31:10 33:2 41:22 42:25 53:15 55:9 58:1 68:15 74:14,15,15 86:11 96:21 98:17,18 99:17 101:16 103:16 108:6 109:23 110:12 115:23 117:3 120:2 125:25 127:21 131:7,9 132:5 137:23 152:18 153:25 154:2,4	154:10 157:8 157:16 160:5 163:3 169:21 170:11 171:4 175:2 183:2 184:6,8 190:17 191:22,24 192:22 195:10 195:14,24 196:23 201:8 203:7 207:23 212:8 214:25 216:21 218:13 221:17 222:13 233:22 237:5 240:12 243:24 244:19,25 248:4 249:8,11 253:12 259:9 259:20 260:15 262:7 266:21 273:16 275:4 276:16 279:17 281:23 285:21 goes 27:23 40:14 175:13 218:19 246:23 250:17 251:7 288:17 going 9:24 10:4 22:17 26:9 29:6 40:11 59:6 63:14 64:2 66:5 67:10 73:22 75:11 76:7,24 84:20 85:20
g			
gabriel 5:11 85:9,14 117:12 117:14 122:3 126:7 gathered 63:22 gathering 62:12 general 31:18 64:18 66:18 170:19 187:9 195:7 generally 15:21 20:3 22:14 27:19 36:20 48:2,5 97:2 113:25 170:16 174:22 175:24 187:13 234:23 generating 166:19 167:14 168:9 genetic 98:25 224:23 274:2 genital 35:2 38:5,9 39:24 40:5 50:14 85:11 89:11,15	gerel 2:3 getting 21:2 54:16 98:12 108:18 130:5 135:8,9 181:24 ghassan 270:4 give 8:19 11:9 31:6 38:1 43:8 56:22 61:12 66:12 68:10 70:10,12 82:25 88:21 97:6 98:8 103:16 106:20 109:18 123:24 136:11,14,15 136:17,18 138:15 142:23		

[going - hazard]

Page 31

86:7 89:18 91:7 109:22 137:14 139:17,23 154:10 161:21 161:25 164:17 165:23 166:23 176:16 179:6,7 179:8 186:6 192:19 193:7 197:3 201:16 205:15 218:13 219:14,15 222:20,23 229:4 230:10 230:19 256:17 256:20 259:23 269:9,11 276:15 284:15 gonzalez 160:16,20 good 8:6 92:8 92:18 93:18,21 95:22 126:25 129:20,21 138:16 goodman 5:15 83:18,21,23 84:20 132:23 133:5,7,10 goodmans 83:21 gossett 5:20 169:16 170:1,3 173:20 218:20 gotcha 41:7 60:17	gotten 123:5 government 139:14 governmental 279:16 grade 199:16 199:19,20 200:6,7,15,16 200:21 201:12 201:13 202:1 202:22 206:16 238:22 240:7 graded 200:24 240:13 gradient 66:22 262:15 263:6 grading 203:9 grams 131:15 grand 15:9 grant 22:4,9 grants 21:12,14 21:15,22 22:9 22:16,23 great 131:20 154:11 178:12 272:25 greater 146:21 182:14 208:24 216:12 231:9 243:22 245:4 249:12,16,19 249:25,25 250:1,4,5 253:6 grew 231:19 233:5,21	group 23:18,21 108:10 109:2 112:4,4 144:11 172:7,21,22 173:6,10 174:1 182:25 186:5 197:24,25 204:21,22 269:25 284:10 groups 171:24 172:6,24 173:11 174:2 211:10,12 213:8 guess 31:22 63:10 66:18 68:10 90:12 91:8,9 125:11 128:3 166:7 guidelines 199:24 guys 21:1 gyn 38:16 gynecologic 86:22,24 274:5 gynecological 105:8 gynecology 36:20,25 h h 6:15 248:12 half 107:9,22 108:22 112:8 140:24 147:1,3 260:9 265:12	278:20 halfway 88:19 93:22 166:11 194:2 202:17 hampshire 118:4 hand 27:24 84:10,12 120:18 136:4 236:10 243:5 250:18 293:19 handling 24:15 24:20 handy 70:2 happen 235:9 happened 146:3 156:4 happens 111:21 239:25 happy 109:21 184:3 230:7 264:9 hard 245:1 269:14 harlow 162:2 167:10 194:24 harmful 96:2 harmonize 183:13 241:9 244:10 247:5,5 harper 6:18 269:8,8,16 hate 116:18 hazard 143:16 144:12,14,15 146:5 147:7
---	---	--	--

[hazard - human]

Page 32

149:9,10 150:18 151:3 162:17 164:7 172:10,12,17 172:18 182:9 242:9 243:14 243:15 253:14 253:14 288:12 head 8:20,21 70:23 health 6:10 18:19,25 19:8,9 19:12,14 36:15 45:8 63:15 64:16,20 98:1,3 98:16 154:23 155:13,23 157:21,23 158:1 160:10 162:11 203:6 203:19 204:7 205:7,20,23 206:23 226:23 227:7,11,14,21 227:23 228:1 230:16 236:6 241:4 260:17 262:2,6 265:9 265:10,11 266:9 273:18 276:22,25 278:22 284:13 284:16,17,21 285:3 heard 78:24 269:22,23	hearing 53:19 53:21 heavily 52:18 53:12 101:4 202:22 height 39:8 help 77:17 helpful 24:23 194:7 helps 159:20 henderson 229:20,23 heterogeneity 98:24 101:2,8 101:12,21,22 189:20 197:9 197:16,22,23 198:2 199:5,14 211:12 213:2 213:13 218:12 220:7 223:6 heterogeneous 99:12 265:19 heterogenic 198:12 212:18 hide 31:12 high 201:4 237:3 240:13 higher 40:22 106:18 124:24 125:1 137:12 163:19 172:11 177:6 209:9,14 209:24 211:9 212:13,16 218:17 237:20	239:1 242:10 242:16,23 243:6 highest 40:16 237:16 251:22 highlighted 174:23 highlighting 59:11 highlighting's 59:3 highlights 58:15,20 highly 111:23 257:12,19 hill 53:22,25 54:13,24 56:21 62:22 64:5 65:5 65:9,21,24 100:4,7,21 197:12 hill's 54:16 histologic 35:22 193:9 histological 35:17 36:9 193:23 265:16 histology 192:1 historic 104:8 histories 40:22 history 49:15 49:22 50:4,5 71:16,21 110:7 274:2 histotype 214:20	hoc 178:5 190:21 191:9 hold 227:13 holding 28:7,13 187:3,10 hope 78:14 139:4 hormonal 38:25 94:23 257:2 hormone 48:24 91:15,20 hospital 198:6 hotel 1:19 13:16 houghton 154:24 160:25 hour 13:2 275:15 hourly 13:7 hours 11:1 14:24 15:1 240:10 261:3 270:17 271:2 271:10,11 housekeeping 271:18 hpv 286:5 hr 161:12,16 162:3 171:9 hrs 171:8 huh 104:24 118:20 123:9 human 62:16 202:6 203:2,18 203:22,23
--	---	--	---

[human - inconsistent]

Page 33

228:5,19,22 250:24 251:23 276:25 279:22 280:5 humans 202:6 203:2 229:5 huncharek 221:9 222:19 223:14 hundred 16:9 33:4 268:6,6,7 hundreds 264:3 264:5 hygiene 105:7 hypothesis 166:19 167:4 167:14 168:8 168:12 214:8 214:11 235:5 261:23 282:11 hysterectomy 91:1 137:7,11 137:20 163:20 164:6 170:13 170:21 246:13	idea 227:24 284:19 ideal 136:3 identified 75:1 79:9 80:14 228:6,20 291:8 identifies 195:17 289:17 identify 78:18 79:13 129:16 ignore 55:14 impact 49:6 164:7 implication 49:16 implications 158:8 implicitly 246:11 implies 49:24 importance 54:9,13,19,25 55:3,5,19 115:11 165:22 important 26:7 27:11 49:14,16 49:21,25 50:4 55:8,13,20 59:22 60:2,7 61:3 65:24 73:21 102:1 114:20 115:9 115:16 117:7 167:2 174:23 175:25 176:6 239:18,24,24	255:5 importantly 135:24 217:9 impossible 110:15 151:15 imprecise 151:20 impressed 206:5 improper 263:3 inability 168:20 inadequate 44:10 inappropriate 191:6 incidence 48:18 incident 49:8 98:9 285:7 inciting 286:3 include 18:1 39:11,11 80:12 81:21 85:9 90:24 118:3 159:5 222:23 235:4,22 236:4 241:8 244:9 252:18 254:21 276:25 included 35:22 47:18 61:12 70:7 76:14 78:19 79:17,20 81:8,13,14,19 85:3,25 99:16 102:2,5 112:24 115:12 127:15	127:17 178:23 189:5,12 190:1 198:17 217:6 220:17 221:12 223:15 236:9 237:2 240:24 245:2 246:15 248:9 252:3,8 254:19 260:2 260:17 272:10 includes 46:3 80:11 205:7 235:1 246:12 258:4 279:1 including 8:18 62:16,17 94:5 153:16 245:5 265:20 269:21 277:17 inclusion 85:4 241:6 243:22 244:13 245:20 246:6 252:4 258:25 259:6 income 16:17 16:25 17:10,13 17:23,25 18:3 incompatible 125:9 263:10 inconclusive 92:8 inconsistency 163:2 inconsistent 161:14 257:24 258:6,18
i			
i.e. 35:2 110:6 128:21 iarc 74:8 204:19,21 205:3,5,6 206:16,17 280:11 284:10 iarc's 204:10			

[inconsistent - intact]

Page 34

259:18 incorporate 19:7 153:16 incorporates 19:4 incorporation 18:22 incorrect 145:11 increase 97:23 110:20 111:6,8 123:22 124:5 126:2 135:20 151:5 157:9 177:9 186:2 192:21 201:6 220:4 224:24 226:10 increased 35:4 44:13 48:23 107:25 108:1 109:13 110:5 121:15 125:6,7 149:21 152:13 155:21,22 157:20 159:13 160:1 164:11 171:19 173:10 174:15 187:11 187:12 193:6 215:4 225:1,8 225:23 234:14 237:25 279:12 increases 36:6 101:17 113:5 165:17	independent 97:18 237:25 indicate 110:6 111:10 122:2 indication 94:21 95:6,11 95:19,21 96:3,6 96:23,23 indicative 201:11 203:8 205:18 267:2 267:11 indirect 229:7 indirectly 228:23 indisputable 229:10 280:8 individual 142:9,12 162:11 183:3,5 184:13 274:24 individually 223:15 247:22 individuals 286:4 induce 271:16 induces 270:21 inducing 94:6 inference 46:15 64:4 inflammation 85:12 93:8 94:6 227:4 284:5 287:7 inflammatory 94:23 282:14	282:17 283:17 283:19 286:3 inflate 181:13 inflates 183:19 inflation 13:5 influence 49:6 182:5,6 251:11 influenced 182:3 influences 186:11 information 110:14 143:18 162:23 262:14 266:24 289:18 informative 28:4,6,9,16 143:14 159:4,4 inhalation 76:9 90:10 277:2 278:25 279:3 inhaled 279:10 inhibitors 95:25 initial 11:21 152:13 156:22 157:23 160:20 161:2 178:7 185:19 187:18 257:25 initially 122:3 148:24 156:24 initiate 93:9 initiative 154:23 155:13	initiatives 155:24 injuries 276:25 282:15 283:18 injury 276:22 inquiries 34:4 inquiry 33:22 insignificant 128:6,9 insoluble 226:25 installation 230:4 instance 35:25 162:16 institute 4:17 18:23 19:12,13 19:15 21:18 41:15 42:1,17 instruct 17:14 17:20 instructing 17:19 instructions 292:15 instructs 9:2 insufficient 153:2,4 intact 125:3 126:9 137:8 163:5 166:20 169:7 174:19 175:22,23 241:9 244:9 246:16 259:11
---	---	--	--

[intake - jama]

Page 35

intake 224:16 intend 152:4 275:1 intended 60:16 intensity 194:15 interact 157:11 interaction 171:18 172:10 173:4,12 210:8 212:1,3,7,19,21 213:6,24 interactions 125:17 219:1 interest 114:7 114:18 118:19 119:12 121:4 231:18 273:18 287:25 interested 288:8,15 291:19 interesting 111:15,16 interpose 139:16 interpret 69:5 107:11,24 109:10 162:21 172:1,23 173:16,18,19 205:16,17 233:19 271:7 interpretation 36:4 115:4 171:17 172:16	172:20 173:1 173:21,22 214:10 217:5 219:2 237:1,4,8 237:12 259:13 261:19 266:24 270:13 288:8 interpretations 141:12 173:5 233:15 interpreted 110:11 161:12 165:6 167:1 202:3 267:9 interpreting 172:9,14 213:23 interprets 287:10 288:11 interval 141:3 141:20 142:4,5 142:8 144:12 146:23 149:13 151:6,21 191:21 193:3 209:20,25 210:20 211:19 212:14 250:12 255:15,18 257:14 intervals 136:18 143:17 146:16 192:9 197:6,17 210:9 210:13,24 211:2,16	212:20 251:5 255:24 256:3 261:15 intervening 65:23 106:11 108:21,23 109:2 interventions 199:22 203:14 intrauterine 230:4 intravaginal 230:5 introduce 85:15 230:20 introduced 227:10 229:20 introduction 153:14,14 234:2 284:1,2 invasive 36:12 investigation 281:14 investigators 132:13 134:14 280:21 invoice 4:11 14:1,2,9,18,25 15:17 78:9 invoices 14:11 17:3 invoke 190:25 invoked 189:19 involve 108:21 involved 119:13 119:22	involvement 139:19 involves 120:8 197:11 involving 126:14 163:4 irrelevant 177:19 181:3 183:17 irrespective 186:20 irritants 286:3 irritation 95:17 isolation 60:11 issue 28:8 31:18 51:8 58:5 135:16 140:12 158:1,18,21 191:2 230:11 230:17 239:23 251:7 258:19 270:13 275:17 issues 113:24 116:12 121:9 121:13 135:11 158:18 176:11 189:24 267:17 279:17 issuing 276:19 iwona 5:10 117:14
j			
j&j 71:15 264:6 jama 138:25 169:18 170:6			

[january - know]

Page 36

january 4:19 12:7 14:4,17 16:3 29:8 42:7 42:17	katie 5:8,16 7:6 91:7 104:1 138:6 283:11 285:8,11	47:16 48:8 49:3 49:20 50:17 53:4,6,7,10 54:20 55:9,14	99:25 100:19 100:21 101:3,6 101:8,14,14,15 101:17,19
jersey 1:4 8:14 274:19,21 293:1	keep 17:2 24:7 34:19 43:3 126:22 154:11 173:5	55:21,21 56:7 56:11,20 57:16 59:4 60:11,20 60:20 61:16	102:1,2,4,6,16 102:16,20 107:7,23 108:2 108:11,15,17
job 24:12,22		62:11,18,25 63:21,24 64:3 64:19,22,23,23	108:19 109:9 109:10 110:11 111:23 112:7
johnson 1:6,6 8:7,7,10,10 68:23,23 284:21 292:3,3 293:2,2	kemi 7:4 283:5 kiarash 6:8 219:18 kidney 25:25 kind 43:7 57:15 87:14 95:10 114:8 181:24 186:10	65:2,3,17,18 66:4,7,7,10 67:15,23 69:6 70:21 71:11,14 71:18,20 72:10 72:15,16 73:1,8 73:16,18 74:1,2 74:3,16 75:9,10 75:21 76:12,13 76:20,22 78:22 78:23 79:6,22 79:22 81:1,14 82:2,3,7,16,18 82:20 84:14,19 84:19 85:1,3 87:7,13,14,16 87:18,21 89:2 89:19 90:8,11 90:21 91:23 92:24,25 93:14 93:14,16 95:8 95:15,17,23,24 96:13,13,13,14 96:14,19 97:17 98:4,5,7 99:14	112:15 113:20 113:23,23 114:8,25 115:4 115:7,8 116:12 116:21,23 117:2 118:1,4,5 120:9,16,20,23 120:24,25 121:2,8,8 122:21 124:19 125:5,8,17 128:23 129:5 129:11,14,20 130:6,13,19,21 130:23 131:5,7 131:9,10 132:20,25 133:1 134:24 135:5,17,19,22 135:22,22 136:8 138:20 138:21,22 139:15,23 140:10 143:8,9 143:13 144:8
johnson's 35:3			
joined 23:5,12 24:6			
journal 23:16 24:8,14 86:25 104:14 139:1,5 269:18,22 270:1	kinds 87:22 knock 157:17 know 8:17 9:4 10:13,19,25 12:2,4,13 16:8 16:12,15,25 17:1 18:2,21 19:3,11 20:7,16 21:20,21,21 24:4,16,16 25:17,19,24 26:1 27:4,8,9 27:17,23,24 34:4 35:22 36:5 36:13 39:8 40:2 40:6,11,12,13 40:18,19,21 44:2,3,5 45:6,8 45:10,14,16,18 46:5,6 47:15,16		
journals 23:5 23:19,21,22 24:1,5 114:11 261:10,14,16 269:24 270:1			
judgment 111:25			
julie 5:14 133:7 133:10			
k			
k 2:5 6:17 28:3 269:16 kadry 6:5 191:12			

[know - lawyers]

Page 37

145:9 146:14	195:22 196:24	253:16,17,19	known 65:19
146:17 147:24	197:2 198:7,12	253:21 254:6	78:2 135:25
147:25 148:3	198:17 199:15	255:18,19	198:4 279:22
149:17,18,19	199:20,21,22	256:4 258:2,13	280:5 284:8
149:20,22,22	200:12 201:2,4	259:2 260:1,4	286:12
150:4 151:1	201:5,7,9,13	261:5,14,18	knows 17:13
153:10,19,23	203:11 204:1	262:18,24	I
155:22,25	204:17 205:22	263:2,3,7,11,18	I 285:9
156:4 157:11	206:2,12,18	263:20 264:6	lab 27:8
158:5,19 159:3	208:8,10,10,14	264:17,21,23	lack 137:21
161:20 162:7,7	210:10 211:24	264:24 265:3	177:11 198:12
162:9,20,22	212:4,17 213:9	265:25,25	lacking 94:8
163:25 164:1,3	213:23 214:3,3	266:4,6 267:8	262:14
164:3,7 165:10	214:4,6,10	267:11,19,23	language 68:21
165:21,22	215:6 216:24	267:25 268:2,8	large 91:11
167:23,23	216:25 217:3,4	269:14,24,25	152:7 263:16
168:1,12 169:1	220:10 222:2	270:1,11,14	largely 91:13
169:1,6,10,11	222:15,16	271:6,7,11,12	203:5
169:13,13,15	223:3,7,8,10,21	271:15 272:5	larger 124:13
171:17 172:12	223:25 224:1,1	273:20 274:12	125:12 179:25
172:18 173:3,9	225:14,16	274:15,18,20	180:20 186:15
173:20,24	226:3,4,22,24	277:16 278:1,2	256:2
174:12 176:8	226:25 228:24	278:6 279:8	largest 185:8
176:10,13	229:4 231:13	280:9,10,14,20	laryngeal 277:1
177:24 179:4	232:3,6,13	280:21,23	279:2,24 280:6
180:6,25	233:4,10,11,14	281:4,7,10,25	lastly 279:13
181:16,18,20	233:16 234:13	282:24 284:11	late 182:1
182:9,10,16	234:15 235:25	284:12 287:3,5	law 118:23,24
183:18 186:4	236:25 237:2	288:11,13,17	205:23 206:7,8
187:10,16	238:25 239:3	289:8 290:3,5	lawyer 15:5
190:12,17,18	240:2,2,3	knowing	206:11,14
190:19,22	242:20 245:17	288:18	lawyers 33:22
192:18,23	246:1,14	knowledge 9:16	77:7 133:15,16
193:5,6 194:19	250:17,21	65:2 139:12	270:6
194:20,25	251:2,10,14	231:22 293:7	
195:8,10,14,21	252:17,20		

[lazar - little]

Page 38

lazar 231:13	lifetime 195:3	111:15 131:14	lists 50:9 79:20
lead 93:9 227:4	217:10,17	150:4 157:14	literature 27:17
227:5	ligation 90:25	177:12 202:14	27:21 28:16
leading 284:5	123:4,14 124:8	210:19 213:15	67:3,9,24 80:14
leeway 68:11	124:15 125:2,8	213:20,22	87:23,25 90:14
68:15	125:12 126:2	214:12,13	114:6,19 115:5
left 23:9 149:8	137:12,20	233:24 284:2	116:23,25
269:1	157:10,13,14	293:9	122:9 196:22
lends 284:18	158:2,11	linear 186:12	197:19,22
length 145:17	163:20 164:5	186:13	203:12 228:6
145:18 179:12	164:12,13	linearly 186:2	228:20 263:23
lens 62:21	170:12,20	lines 69:3 106:1	286:15
65:19	245:14 246:7	194:7 225:19	litigation 1:9
lesser 67:22	light 73:7	266:25	8:14 11:18
lethal 111:23	liked 256:3	linked 61:16	13:13 15:14,18
letter 161:21	likely 90:19	list 4:13 10:17	15:21,23 16:17
162:1 165:23	94:25 96:9 97:9	31:1,3,9 38:9	17:10,23,25
166:23 167:6,9	136:5 201:23	39:6,10 44:20	29:15,22 30:4
letters 171:16	281:9	44:23 51:16,19	32:7,8 33:22
199:16	likes 21:21	55:10 78:20	54:10 114:7,8
leukemia 32:20	limitations	79:21 80:6 83:3	116:4 118:17
level 98:11	53:14 115:19	101:16 102:2,7	119:6,11,22
199:13 267:25	152:1 183:8	102:14,19	139:13 208:1
268:8	203:25	112:25 113:18	231:15,20
levels 144:7	limited 89:12	127:12 207:19	233:1,6,21
169:15 250:24	90:5,11,15	207:22,23	263:23 264:2,4
levin 2:11	91:19 92:7	231:12 247:23	264:12,22
levinlaw.com	94:18 98:1,3	271:20,24	270:7 275:2
2:16	107:15 142:24	272:1,11,12,13	292:5 293:4
li 52:15 53:10	143:3 156:1	listed 22:2	little 13:3,19
liability 1:9	159:6 177:2,8	26:19 29:7,16	23:20 64:2
32:6 292:5	182:12 184:16	33:19 38:6	68:15 72:20
293:4	246:16 247:9	55:18 80:17	106:16 118:16
library 79:7	limiting 244:14	231:17	143:18 162:2
lifestyle 38:24	line 59:13 66:12	listing 34:7	177:14 189:22
132:1	73:4 105:15	59:24	197:21,23

[little - looks]

Page 39

198:1 201:22	44:19 55:10	162:25 164:2	262:5 264:2,3
204:18 252:2	57:13 58:17,18	167:23 168:15	268:1,2 270:2
255:22	60:5,9,10,15,19	169:16,22	270:13,16
live 13:19	60:23 61:5	170:5 173:17	271:19 272:25
living 254:23	65:16,19 66:14	176:18 178:12	273:5 274:5
llc 8:8	66:19,24 70:3	178:12 179:17	284:14 288:23
llp 2:3,19	74:16 79:11	181:6 183:4,8	288:24
local 282:16	81:7 82:21 83:3	184:16 185:22	looked 12:4,6
283:18	83:14 84:14	188:2,8 190:17	36:24 37:7
locations	85:8,17 86:6	191:10,22	45:13 53:11
286:13	88:18 97:12	193:1,19 194:1	122:10,16
long 48:10	98:13 101:5,16	195:10,24	129:14 133:22
86:14 109:22	102:20 104:3,6	197:9 198:5,18	144:7,8 183:4
144:10,14,17	105:3,14 107:8	199:7,8,11,15	208:8,9 223:23
144:19,20,22	108:11,14,20	200:2,2,18	232:13 271:8
144:24 145:1	109:15 110:3	201:18 202:11	288:7,7
145:24,24	110:19 111:24	208:16 210:23	looking 42:16
146:1 147:6,16	115:18 118:6	210:24,25	44:3 56:2,5
147:21,21	120:12,13	216:24 218:12	64:12 66:8
148:14 150:17	123:2,4,7 124:7	219:4 220:9	83:13 107:10
152:7,7 209:10	124:17 125:15	222:14 224:8	112:6 113:10
233:17 264:24	126:16 127:9	226:4,13 227:8	123:13,13
271:16	128:14 130:7	228:1 229:18	125:15 129:13
longer 153:17	131:10 133:25	231:11,11	144:5,10 158:7
155:20 209:15	136:25 137:4	233:24,25	167:21 168:5
210:5	140:2 142:19	235:14 236:14	180:16 189:2
longo 68:24	142:20 143:15	238:4,8,17	192:10 201:1,4
72:7 74:6,15	145:6,13 146:1	239:6 241:12	202:16,20
280:22	146:21 147:3,6	243:10,14,24	211:1 227:16
longo's 78:23	148:24 149:7	244:11,19	232:6,15 235:9
look 12:17 18:8	151:22,23	247:19,25	242:8 246:11
25:2 26:17,22	152:18 153:7	248:14 251:3	250:22,23
28:1,20 29:4	154:21 155:23	253:20 254:8	254:20 256:11
30:11 31:10,19	156:2 157:13	254:24,24	290:17
34:24 40:2,3	158:3 159:15	255:14,16,19	looks 18:12
42:4,4,9 44:6,8	160:2 162:22	255:21 257:6	19:20 23:4

[looks - marked]

Page 40

<p>24:17 106:17 188:21 lopes 1:24 291:3,24 lose 39:4 losing 107:13 269:11 lost 146:16 180:7 lot 26:10 43:3 51:1 64:21,24 86:12 87:9 191:2 201:5 212:4 223:10 226:2 270:7 lots 203:9 267:12 low 96:7 97:21 97:22 150:24 189:18 192:22 200:7,10,25 201:4,5,19,20 202:1,21 203:12 237:2 239:19,25 247:13 lower 146:9 147:20 148:15 148:19 150:25 151:7,12,16 161:13,17 172:13 210:3,6 210:11,12,16 210:18 lowest 194:10</p>	<p>luis 3:3 41:9,11 47:20 52:7 57:6 lunch 117:8 118:16 lung 40:19 41:2 267:24 277:1 277:18 279:2 279:23 280:6 lymph 229:1 lynch 46:5,8,12 46:13 47:17 233:14 lyons 3:4</p> <tr> <td>m</td><td rowspan="2"> <p>m 5:8,10,16 7:6 104:1 117:14 138:6 270:4 285:11 m.d. 1:17 4:3 4:15,20 5:5,19 5:20 7:5 8:1 34:18 42:8 57:9 154:7 170:1 283:5 292:1 293:5,23 m.p.h 1:17 4:3 8:1 34:18 42:8 57:9 292:1 293:23 m.p.h. 154:8 293:5 m.p.h..... 5:19 m.p.h.....34 4:15</p> </td></tr> <tr> <td></td></tr>	m	<p>m 5:8,10,16 7:6 104:1 117:14 138:6 270:4 285:11 m.d. 1:17 4:3 4:15,20 5:5,19 5:20 7:5 8:1 34:18 42:8 57:9 154:7 170:1 283:5 292:1 293:5,23 m.p.h 1:17 4:3 8:1 34:18 42:8 57:9 292:1 293:23 m.p.h. 154:8 293:5 m.p.h..... 5:19 m.p.h.....34 4:15</p>	
m	<p>m 5:8,10,16 7:6 104:1 117:14 138:6 270:4 285:11 m.d. 1:17 4:3 4:15,20 5:5,19 5:20 7:5 8:1 34:18 42:8 57:9 154:7 170:1 283:5 292:1 293:5,23 m.p.h 1:17 4:3 8:1 34:18 42:8 57:9 292:1 293:23 m.p.h. 154:8 293:5 m.p.h..... 5:19 m.p.h.....34 4:15</p>			

 m.p.h.....42 4:20 **m.p.h...57** 5:5 **made** 36:25 91:9 146:4 204:6 251:21 277:7 291:12 **magnitude** 124:24 125:1 126:3,3 **main** 79:24 181:22 253:21 253:22 257:25 258:6,18 259:19 **maintain** 202:5 203:1 **major** 121:12 159:8 **majority** 64:22 78:21 99:23 260:20 **make** 8:21 13:16 25:18 27:6 54:22 56:4 56:8 63:8 64:4 70:16 78:12 82:16 86:6 91:7 91:25 93:1,23 111:25 154:18 183:14 199:24 200:5 223:7 250:20 251:19 251:21 264:8 267:20 271:13 292:18 | **maker** 201:13 **makers** 199:21 201:14 **makes** 43:14 52:5 129:23 130:10 148:21 233:18 **making** 56:7 92:25 120:14 185:4 201:14 211:3 **malignancy** 245:8 **malignant** 270:21 271:3,9 271:16 **management** 8:8 **mandate** 24:10 **manufacturer** 115:1 **manuscript** 232:15 **manuscripts** 264:3 **mark** 9:24 10:4 34:15 42:5 88:8 103:21 117:12 133:5 138:4 154:5 169:20 169:25 179:14 207:2 248:11 269:7 283:4 **marked** 9:7 14:1 18:9 31:1 34:18 37:12 |

[marked - mean]

Page 41

41:8,16 42:8	83:17,23 85:15	290:19 292:11	53:3,4 54:15
47:23 52:7,10	88:8,14 92:22	293:25	55:2,9 60:6,10
57:5,9 84:3	98:17,20 103:4	mas 1:8 293:3	60:23 61:17
86:17 104:2,4	103:9,18,21,24	mash 182:1	62:10 63:14,15
117:15 121:25	105:19,22	massachusetts	63:20 64:18
127:3 133:8,9	106:1 110:22	1:21 2:22 13:20	67:13 69:11,20
138:7 154:8	115:22,25	17:5 118:4	73:5,8,16,25
170:2 179:16	117:8,11 120:1	291:5	74:3,14 75:7,16
187:20,23	124:22 126:21	material	76:10,19 78:24
191:13 207:5	127:6 129:25	148:21 149:25	81:7 82:6,13
219:16,19	130:4 132:15	150:3,10	83:2 84:13
220:10 221:5	133:5 136:24	materially	87:13 89:18
227:11,15	137:23 138:2	125:19	90:3,7,17 91:4
230:24 231:1	138:14 140:1	materials 10:11	91:23 94:17
248:13 269:17	140:20 146:25	11:10 69:16	99:7 101:13
275:23 276:3	154:1,4,15,20	79:2 118:7	102:1,3 107:9
283:2,3,6,10	157:16,19	math 15:4	108:1,11 109:9
285:5,12	159:18,25	matter 35:18	110:10,12
markers 274:2	161:7 166:11	35:23 120:18	111:16 112:5,7
marketing 1:7	166:14 169:20	200:8 210:20	112:15 113:7
292:4 293:3	169:24 175:7	264:7	113:19 114:10
martin 2:20 4:6	175:16 176:21	maximal 136:4	114:22,23,24
7:9 8:5,7 10:1,4	176:23 177:2	136:7	115:18 116:6,8
14:7 17:8,16	180:9,11,13	mcl 274:19	116:18,19,24
18:5,8 21:4,6	184:8,11,21	mdl 1:7 8:11	117:6,25 120:2
30:24 34:15	187:20 207:2	15:14 58:10	120:15,23,25
37:11 39:18	218:1 219:7,10	274:16 293:3	122:4,10,20
41:8,13,19,22	219:14 225:11	meagher 2:19	124:17 125:4
41:24 47:20	230:20 239:13	mean 16:1 17:2	125:24,24
52:6 57:5,19,25	248:4,7 262:7	20:10 21:13	127:18,19
58:4,14,18,22	262:10 265:10	27:4 30:13 31:8	128:4,5,7,8
58:25 59:6,15	269:8 275:4,7	31:8 34:7,9	129:2,20
59:18 61:24	277:10 281:18	37:8 40:11	130:16,19,22
64:6,9 69:16	283:7,25	42:19 45:6 46:2	132:19,23
70:2,13 77:14	284:23 285:1	46:25 47:12	136:20 137:16
77:24 83:9,12	287:15,18,21	49:2,7,20 51:21	139:14 143:12

[mean - meta]

Page 42

144:14 145:25	260:3,23	287:5	126:6 145:2
146:14 147:23	261:18,21	mechanistic	152:16,21
148:7,22	262:24 263:11	64:25 204:24	159:7 166:17
149:10 150:8	263:20 264:1	median 136:7	182:2 183:20
152:17 153:22	266:6 267:18	142:15 160:19	202:12,23
154:13 155:5	267:23 268:1	mediating	205:7 210:13
160:4 161:23	271:11 273:14	96:21	227:7 231:25
162:10 163:24	274:3 280:8,10	mediators	254:25
168:10 169:11	280:15,19	282:17 283:19	mentioning
171:25 172:25	meaning 39:16	medica 269:19	166:22
173:9 176:12	204:15 216:15	269:25	mercifully
176:24 181:16	225:21	medical 19:13	48:11
183:11 184:3	means 93:14,16	19:21,24 20:10	mesothelioma
185:22 186:13	95:20 98:14	20:12 33:7	35:8 277:1,17
186:20 187:8	128:8 201:19	62:14	279:2,23 280:6
190:5 192:10	251:18 273:21	medically	mesotheliomas
192:20 193:8	meant 41:6	148:24 149:4,7	266:3
195:7 196:25	77:24 244:4	150:19	met 11:1 91:9
204:21,23	measure	medicine 18:23	243:21 252:4
205:19,24	147:25 148:5,6	19:8 23:7,10	259:6
206:1,3,10,14	185:12 198:3	261:12	meta 26:10
210:11 211:17	288:21	medium 237:3	44:24,25 45:7,8
214:13,22	measured	meet 246:1	45:14,15,16,23
218:12 220:18	146:20 148:8	meeting 11:10	45:24 46:13
222:9 223:3	263:9	member 24:18	81:16 84:5,11
225:14 226:3	measurement	memorializing	85:7,23 101:24
226:21 228:23	104:9	21:9	183:21 184:1
228:24 229:1	measures 106:4	mental 15:4	188:10,23
230:6 233:17	mechanism	mention 76:6	189:5,12,15,17
233:20 234:12	76:16 89:25,25	152:15,20,24	190:2,9,10
236:25 239:3	90:8,13,20	170:18 193:12	198:3,8 199:8
239:17 242:19	168:5 226:15	245:16,17,18	221:16,18,21
244:18 245:15	282:6,24	mentioned 22:8	221:23,24
247:25 252:16	mechanisms	28:14 65:4	231:5,19,24
254:6,23 255:1	81:20 89:21	69:10 74:8,9	232:14 234:24
256:6 258:18	90:10 168:1,2	88:10 89:24	235:2,8,10

[meta - months]

Page 43

245:19 246:15 247:17 248:10 250:19 251:3 251:12,19 253:21,23 255:13 256:1,4 257:8,11 258:24 281:16 method 135:24 methodologic 121:13 methodological 121:9 methodologic... 191:8 methodology 43:21 44:2 63:4 63:13 64:14,15 74:3,16 114:24 116:11 117:1,3 208:9,17 233:12 244:11 methods 72:11 110:12 113:10 115:8 118:7 206:21 244:15 244:19 245:12 251:16 270:14 285:23 meticulous 206:5 metric 194:19 194:23 195:1 metrics 150:16 meyers 18:22 19:12	michelle 2:4 289:8 292:9 microscopy 73:7 middle 153:11 166:3 189:9 217:22 migrate 229:10 283:16 284:20 284:22 migrated 229:14 migrates 287:6 migration 76:7 93:7 168:2 173:16 227:1 227:20,24 229:8 284:13 287:7 million 140:14 158:23 177:23 mills 194:24 mind 83:1,21 93:12 173:5 175:6 272:23 mined 286:13 mineralogist 69:2 minerva 269:19 269:23,24,25 mini 42:11 minimal 136:4 136:7 197:16 251:11 minor 182:5,6	minus 255:20 255:21 minute 38:1 109:18 169:22 minutes 269:1 271:19 minutia 225:13 mirrored 281:5 mis 148:8 misclassificat... 131:2,6,20 132:10 168:24 misclassificat... 132:24 misconstrued 198:1 mish 182:1 missed 104:12 286:7,9 misstates 28:11 36:1 44:15 49:18 50:6 60:3 65:25 75:14 92:21 93:20 122:16 141:9 141:24 150:6 167:15 205:13 231:23 232:10 242:18,25 252:6 mistaken 103:1 misunderstood 175:8 mode 136:8 model 93:7,13 93:13 287:4,8	models 92:9,19 93:2,3,18,21 284:3 287:5 moderate 162:8 modifiable 40:14,21,23,24 41:5 mohamed 6:4 191:12 molecular 99:1 265:17,23,24 266:6 moment 82:25 98:18 101:19 137:24 224:13 244:8 262:8 moments 149:24 monday 10:18 13:25 18:11 69:17 103:13 133:15 272:7 272:13 284:24 287:23 monetary 18:3 money 15:22 15:23 monographs 25:8,10 month 18:12 145:13 216:11 248:22 249:2 249:13,17,20 250:5 months 106:7 106:23 144:23
---	--	--	---

[months - nodes]

Page 44

145:10 146:2 moore 285:9 moorman 11:25 207:25 208:13 263:16 moorman's 207:19 morning 8:6 12:20 213:14 morphologic 99:2 move 18:6 30:24 92:2 136:22 138:3 215:8,18 219:15 232:23 232:24 240:15 244:5 263:12 movement 228:4,19,21 moving 73:18 mparfitt 2:8 mucinous 192:7,16,22,25 muffled 21:3 multi 245:10,16 246:10 247:18 multicase 27:21 multicausal 101:6 multicounty 8:14 multiple 60:25 80:9,22 165:4,9 165:10 224:6 231:8 244:20	245:3 287:5 mutagenic 93:9 227:4 282:18 284:6 mutations 99:1 myeloid 32:20 n n 4:1 5:1 6:1 7:1 28:3 177:5 177:7 184:24 185:19 196:4 196:15 n.w. 2:5 name 8:6 19:25 73:8 91:7 185:25 207:19 napkins 245:7 285:25 narod 5:23 178:8,14,18 179:13,15 180:3,21 182:18,23 185:10 272:16 273:2,3 narrative 81:24 national 4:17 21:18 41:15,25 42:16 241:4 nature 31:13 32:12 99:13 137:21 nci 87:16 120:16	near 184:14 necessarily 30:15 43:19 45:6 55:20 63:7 67:23 90:17 96:5 165:24 201:12 278:4 necessary 76:3 276:21 292:19 need 26:22 40:3 59:18 65:9 88:14 92:2 142:20,22 153:10 176:9 179:25 180:1 180:19,20 181:20 182:19 268:6,7 neighborhood 15:10 neither 172:7 173:6 neutral 116:15 never 13:20 34:11 56:21 110:16 163:9 163:12,16 198:8 232:25 233:3 252:18 252:18 nevertheless 170:25 new 1:4 8:14 19:2 21:22 42:25 65:23,24 66:4 79:13	118:1,4 121:14 154:5,13 156:19 168:16 168:17 260:13 260:14 261:9 271:19 274:19 274:21 293:1 newcastle 236:21,23 237:6,17 238:15,19 239:6 240:8,11 newer 246:24 nhs 143:21 144:16 155:25 156:16 159:3 251:6 nhsi 156:21 167:23 177:17 181:10 nhsii 143:22,25 144:19,21 155:25 156:12 156:18 158:22 159:4,8 160:12 164:2 177:18 181:4,8,9,12,25 182:3 nicolas 5:6 86:16 niehs 138:21 nih 21:16,17 120:16 nod 8:20 nodes 229:1
---	---	--	---

[noise - o'brien]

Page 45

noise 125:21,22 125:24	251:13 292:16	140:5,12 143:8	o
non 17:22,25 29:21 35:6 94:9 111:25 112:4 170:10 173:4	noted 68:5 75:10 78:6,9,10 152:22 154:25 155:4 159:25 164:11,14 189:4,4,11 190:1 214:22 235:21 280:19	145:18,19 148:1,2,4 150:23 151:2 155:21 158:21 177:4,6 179:5 180:4 184:23 185:6,18,25 186:21 187:3 187:13 190:13 199:4 227:9 238:6,7 242:2 242:15 256:23 265:15 272:18	o 285:9,9 o'brien 5:9,17 7:7 44:25 45:1 46:21,22 64:24 69:5 86:18 87:8 88:9 91:5 101:23 102:9 104:1,3 129:17 129:18 136:23 138:3,6,17 141:11 148:23 153:2,7,21 154:9,11 155:14 156:19 157:22 160:8 160:13,23 161:24 162:1 163:4 164:16 166:24 169:18 177:7 178:23 178:24,25 181:1,3 182:14 206:22 210:19 211:17 226:23 229:12 235:23 236:8,12 237:18,20 240:23 241:3,5 242:12 246:15 251:9 254:11 255:5,9,21 257:21 258:4 258:14,21 259:5,20 260:1
nonexposed 128:20,24 129:3	notes 98:18 169:22 227:17 275:5 291:16	186:21 187:3 187:13 190:13 199:4 227:9 238:6,7 242:2 242:15 256:23 265:15 272:18	
nonintact 137:8 170:25	notice 4:10 9:7 9:22 122:2,6	numbers 107:12,24 109:10,16 123:24 124:16 129:21 135:8 142:20 150:23 158:7,9,17 173:13 177:16 178:10 181:21 186:23 192:21 253:11	
nonobese 96:9	noting 290:15		
nonpatent 141:14 170:9 171:9,18,22,25 172:13,17 174:2,13,15 219:3 286:19	notoriously 213:24		
nonrelevant 81:5	novel 27:11		
nonsignificant 171:22 212:16 218:13	november 14:25 35:1 37:20 61:10 272:5		
nonusers 174:21 241:20	nuance 282:23		
nos 238:14	nuanced 274:13		
notable 99:16	null 214:11 261:23	numerical 115:20	
notary 8:2 291:4,25	nullified 127:25 128:4 130:25	nurses 155:12 157:21,23 158:1 236:6	
notations 292:18	nullify 131:21	nursing 20:13	
note 21:3 99:17 99:18 114:16 121:17 126:17 158:6 159:13 160:19 228:23	nullifying 127:16	nutritional 224:16	
	number 15:2 16:5 42:13 49:25 50:9 112:7 137:2,16		

[o'brien - odds]

Page 46

282:22 283:2	52:25 54:2 55:1	231:21 232:2	obtain 292:10
283:11,20	56:15 64:17	232:10,19	obtaining
285:8,11,18	65:11,25 67:6	233:8 234:11	261:22
286:20 287:3	71:17,23 75:4	235:12 236:7	obviously 28:4
o'brien's	75:14 77:8	239:2 240:9	39:10 44:4 60:7
177:12 218:9	87:12 88:5	242:1,17,25	62:23 68:24
235:3 236:5	89:17 90:16	243:3,8,23	74:13 112:24
259:22 288:8	91:21 92:20	246:8 247:10	115:8 116:12
oath 291:9	93:19 95:5	252:6,14 254:1	120:19 133:14
ob 38:16	96:11 97:10	254:5 255:7	150:14 155:23
obese 96:8,16	100:5 107:4	261:2 263:25	158:20 161:24
97:9	112:13 116:5	264:14 267:7	181:5 237:4
obesity 96:14	116:17 117:5	268:14 270:10	267:24 270:13
96:18,19,21	119:15,24	271:5 273:15	oc 224:18,22,24
101:17,20	120:10,22	277:10 290:2	225:2 282:14
224:25 225:6	121:1 123:23	290:12	ocac 45:11
226:8,10	128:11 129:1,7	objections 9:22	46:25 268:2
object 8:25 9:1	130:15 132:18	10:2,7 21:8	occur 94:22
17:11,13 93:19	139:17 141:9	291:11	131:18 271:9
122:15 137:14	141:23 146:11	objective 56:13	271:10 274:7
139:17 213:18	147:13,19	56:14,19	286:8,11
objection 12:12	148:17 149:15	236:23	290:16
15:25 16:6,10	150:6,22	observation	occurred
16:14,18,21,24	151:17 158:13	186:23	156:16 232:12
17:6,24 25:9	162:5,18	observational	232:13
26:21 27:22	163:13,21	179:22,24	occurs 164:5,6
28:10,17 30:7	167:15,20	200:7,8,10,11	255:23
31:25 32:4,23	169:8 173:8	201:2 203:11	october 18:20
33:5,15,20	174:5 176:1,7	observe 271:3	43:15 291:25
35:19 36:1,17	190:16 191:7	observed 94:22	ocwaa 45:11
36:22 37:6	192:17 195:6	98:25 110:20	47:1
40:10,17 41:3	205:13,25	111:1,6,8,12	odds 126:8
44:12,14 45:25	206:9 208:6	162:15 211:13	127:24 128:8
46:11,23 47:11	209:1 211:22	213:3 215:22	137:7 163:19
48:25 49:18	213:1 225:24	215:25 216:2,5	191:20 211:9
50:1,6,24 51:6	229:17 230:13		221:18 222:4,7

[odds - oophorectomies]

Page 47

222:12,15,16	38:12,15,20,23	128:18 129:5	234:6,7,17,23
222:24 223:1	39:2,15,22	130:18,24	236:14,16,21
223:11 242:24	41:12 42:4,25	131:5,25 132:5	237:19,23
243:6	43:4,17 44:19	132:22 134:11	238:25 239:6
offer 62:2	46:8,20 47:5,9	136:22 137:10	239:16 241:19
73:22	47:20 48:2,6,14	138:16 139:21	242:8,13
offering 8:13	48:17,22 49:9	140:7,15,23	243:18,19
35:5,12 68:1	49:13 50:2,3,9	142:7,11	244:4 246:19
76:2,7 274:23	50:12 51:10,13	144:10 146:8	247:22 249:1
office 58:21	51:15,20 53:1	147:9 148:23	250:8,15
ogunsina 7:5	54:7 55:4,7	149:7 150:15	254:22 255:3
102:9 283:2,5	56:4 58:16,16	151:5,10 152:6	256:10,25
283:11,20	61:10 62:4 67:3	152:19,25	257:6,11,19,23
287:19	70:21 71:8,14	153:7 154:17	260:13,16,25
oh 191:1	71:25 72:24	155:9,12,19	261:17 265:11
okay 8:17 9:10	73:3,15 76:1,6	156:13,21,24	266:21 268:24
9:14,20 10:10	77:6,10,19,21	159:11,13	270:3,20 271:2
11:9,12,16,20	79:16 80:7,17	161:4 164:9,25	271:22 272:9
12:9,17 13:4,12	84:8,9 85:19,25	168:25 169:20	276:14 278:15
13:18,23 14:16	86:14 88:7 89:6	171:4 172:23	279:13 285:17
14:20,23 15:8	90:4 92:17 94:4	173:2 174:9,16	288:23 289:5
15:13,16,21	97:5,20 100:1	175:12 176:25	old 154:13
16:5,23 18:15	100:10 101:10	182:8 183:10	older 247:1
18:19,24 19:7	101:23 102:13	184:16 188:6	once 190:24
20:2,14 22:8	102:18,24	188:19 189:2	245:23 284:4
23:1,3,12 24:4	104:18,22	190:10 192:3,4	oncologist
24:19 25:1,6,13	105:3,12,24	194:1,8,9 199:2	274:5
26:15,24 28:24	106:25 113:15	205:4 207:2,11	oncology 86:22
29:10,18,21,25	114:4,18	207:15 208:23	86:24
30:3,11,21,24	115:14 118:13	209:17,18	ones 22:1 79:19
31:6,11,20,23	118:16 119:5	210:2 212:9	79:23 143:15
32:19,25 33:2,7	119:21 120:5	215:18 217:19	212:5 246:22
33:11,17 34:3	122:14,24	220:23,25	246:22 255:24
34:14 35:8,12	123:7,10 124:7	221:4,8,11	oophorectom...
35:15 36:11,24	124:8,13,20,25	223:18,25	156:3,10
37:3,10,22 38:4	125:23 126:14	228:1 233:5,17	

[oophorectomy - ovarian]

Page 48

oophorectomy 156:5,7,15	102:4 135:1,3,4 141:25 267:19	81:25,25 84:7,8 84:10,17 86:1	ovarian 12:23 22:6,13 29:12
open 74:10	272:10 277:25	101:25 102:3	29:15,19,22
operational 87:23 95:12,23 96:1	278:1 279:6 280:16 285:15 285:19 287:1	113:10 145:14 258:6,10 259:19 292:8 292:11	30:5,18,22 35:4 35:6,13,15,18 35:21 36:4,6,15 37:5,24 38:10 40:7,25 44:13 45:4 46:9 49:15 50:5,14 76:4 84:1 85:10 86:19 89:11,16 89:22 91:13 92:9,19 93:18 94:24 96:23 97:23,25 98:9 98:23 99:6,10 99:13,23 100:11 101:5 101:18 105:14 106:5,12 107:10,15,23 108:16,18,21 108:23 109:3 110:7 111:10 111:20,22 112:8 113:1,3,5 113:11,22 114:12 117:13 118:3 123:8 133:11 138:24 141:13 142:16 142:18 143:10 152:12 154:25 156:6,7,8,11,25 158:25 163:6
opined 279:17	opioid 264:3	originally 26:13	
opinion 12:15 31:16 32:12 35:5,12,24 36:3 51:11,23 52:2 52:22 53:8 57:1 57:3 60:18 65:6 65:22 66:6,6,7 66:10 68:2 73:22,24,25 76:2,8,13,17,19 81:24 82:3 94:8 94:18 99:9,13 99:14 115:17 146:4 176:14 197:19 203:21 203:22 204:1 224:2 225:20 226:7,10 255:4 261:6 267:15 267:15 268:20 268:21 274:23 277:7 278:2 280:3,25 281:4 281:6 283:21	opioids 264:23 opportunity 148:12 opposed 53:9 108:9 259:11 opposite 164:14 optional 114:11 options 145:8 oral 48:23 164:4 237:11 245:18 274:1 oranges 258:14 order 4:23 52:1 52:3,9 54:8,12 54:18,25 55:3,5 55:19 57:15,22 179:19,23 180:14,18 ordinary 40:16 87:24 organization 36:21 38:13 48:3,4 organizations 36:15 origin 98:25 original 25:20 25:21 26:5,11 28:25 80:25	ors 134:15 os 143:21 144:19 ottawa 236:21 236:23 237:17 238:15,19 239:7 240:8 ou 33:7 outcome 27:25 53:23 54:1 95:13 101:1 104:11 136:5 223:2 239:4 287:25 outcomes 185:12 288:21 outline 88:16 287:8 outlined 113:10 outlines 195:12 output 27:7 outreach 36:14 outside 13:20 15:14 29:14 30:3 outweigh 279:25	

[ovarian - page]

Page 49

164:11 167:5	172:14 174:14	22:17,17,21,21	168:15 170:5,6
168:13 171:13	278:2	23:3 25:7,13	175:1,2,3
173:25 174:20	overlap 197:7	26:24,24 28:21	176:18,25
177:4,7,10	197:17 211:17	30:11 37:14,17	178:13 179:18
178:8 184:23	212:5	37:18,22 42:9	179:20 180:9
187:5,6 189:6,6	overlapped	42:10,10,13	184:17,20
189:13 190:5	210:20	43:5,9 48:12,15	188:2 191:15
192:19,25	overlapping	49:9,10 52:11	191:23 194:2
193:10 196:18	210:10,14	52:12 53:18	195:24 196:3,9
204:3 208:11	218:25	59:9,10,12,19	196:10,11
214:18 216:8	overlaps 211:19	62:6,7 66:12,14	200:19 202:12
216:18 220:4	overweight	66:17 67:1	202:17 206:3
226:1,11,15	224:25 225:6	68:19 74:18	207:9,10,11,20
229:7 231:10	overwhelming	79:11 81:10	209:3 212:10
234:7,21	99:23	85:18 88:18,22	214:24 215:1,9
241:25 260:20	own 65:15	89:3 97:17,24	215:15,19
265:23 266:1,4	190:15 263:10	98:21 104:12	217:19 218:1
267:20 268:13	286:17 287:10	104:13,13,14	219:20,25
268:22 273:10	oxidative	105:13,16,17	220:10,22
274:24 275:17	282:16 283:18	110:21,22,23	221:5,8 224:9
277:1,18 278:3	p	118:7,18	224:10 226:13
278:10 279:2	p 6:6 161:11	121:21,24	227:21 228:3,9
279:12,24	165:2 173:17	123:3 127:8,9	228:10 229:19
280:6,10,13	207:4 212:23	128:15 133:24	231:3,3 235:14
281:1,11,15	212:25 213:3,6	134:1 136:2	236:14 238:9
282:6,15	213:7,9,15,20	137:15,16,17	238:11,18
285:20 286:17	214:2,4,5,5	140:3,16,20	239:12,13
288:19 290:15	218:12 220:5	144:5 149:4	244:16 248:15
ovaries 76:8	261:15,20,20	151:23 153:7	255:1 256:23
228:25 229:15	261:21	154:21 155:4,8	260:7,12 262:6
229:22 230:3	p.m. 290:23	157:8,8,13	265:8,12 266:9
ovary 48:15	page 4:5,9 5:3	159:19,21	266:16 270:2
overall 45:18	6:3 7:3 9:12	160:3,5 161:4	270:16 271:23
53:7 99:14	18:17 19:17,19	161:12 163:3	273:7,8 276:16
124:16 146:12	21:1,11,12	164:9,16,18	277:12,14,19
146:13 171:10		166:1,8,12,23	278:12 279:14

[page - parfitt]

Page 50

279:18 281:25	par 98:10	265:15 266:11	69:18,22 70:8
283:23,25	paragraph 44:8	266:19 273:1,6	71:17,23 72:19
284:1,15,15	49:10 52:14,20	273:7,8 278:21	74:8 75:4,14
285:21 288:24	74:20,21 88:19	284:17	76:15 77:8,13
288:25 289:1,5	89:3,4,6 91:10	paragraphs	77:22 80:3
289:7 292:9	92:4 93:22	48:14 134:3,6	81:10 82:25
293:9	97:16,20 104:7	parentheses	83:16,20,24
pages 1:1 38:17	104:8,17 105:4	171:8 213:3	85:14 87:12
43:13 44:7,7	105:23 107:9	parenthetical	88:5,17,22
121:11 126:18	110:20 111:2,3	263:15,16	89:17 90:16
156:22 159:17	111:3 128:16	parfitt 2:4 4:7	91:21 92:20
195:25,25	151:25 153:13	8:25 9:21 10:3	93:19,25 95:5
207:6,13 257:4	155:4,7 160:17	10:17 12:12	96:11 97:10,14
paginated	161:1,11	13:25 15:25	100:5 103:12
37:13 43:14	164:18 166:3	16:6,10,14,18	105:18,20,25
48:11 88:10,15	166:12 170:6,8	16:21,24 17:6	107:4 108:6
256:24	170:18 178:13	17:11,20,24	109:20,25
pagination	179:18,21	18:7 25:9 26:21	110:21,24
104:14	180:11,16	27:22 28:10,17	112:13 116:5,7
paid 31:24	188:8 189:2,9	29:4 30:7 31:25	116:17 117:5
32:22 116:3	191:18 196:4	32:4,23 33:5,15	119:15,24
270:5	202:15,16	33:20,24 35:19	120:10,22
pains 292:21	204:5,9 209:3	36:1,17,22 37:6	121:1 122:15
293:6	212:8,12	38:2 39:16	123:23 124:21
papantonio	215:16,20,20	40:10,17 41:3	126:17,25
2:11	215:24 217:21	42:12 43:7,12	128:11 129:1,7
paper 54:16	217:22 218:2	44:12,14 45:25	129:16,24
69:6 76:12	219:25 224:9	46:11,23 47:11	130:15 132:13
86:12 91:5 93:5	224:11 226:14	48:25 49:18	132:18 137:1,3
103:23 116:15	228:3,15	50:1,6,24 51:6	137:14,25
121:5 135:2,6	229:18,19	52:25 54:2 55:1	138:13,15
208:4 232:1,7,9	230:1 231:2	56:15 59:13,16	139:16,22
272:16	235:15,18	60:3 61:7,23	140:18,22
papers 116:20	244:22 257:7	64:1,7,12,17	141:9,23
116:21	260:8,10	65:11,25 67:6	146:11,24
	262:12 263:12	68:10,14,18	147:13,19

[parfitt - pdq]

Page 51

148:11,17	235:12 236:7	276:4 289:2,22	244:13 245:14
149:15 150:6	238:7 239:2,12	289:24	246:7,12,25
150:22 151:17	240:9 241:1,11	partially 56:13	247:1,4,6
153:10 158:13	242:1,17,25	56:14	patent 89:12,23
159:17,19,23	243:3,8,23	participant	90:5,15,22
160:2 161:6,8	244:14,25	110:15	141:14 147:4
161:23 162:5	246:8,20	participants	148:15 163:7
162:18 163:13	247:10 252:6	132:9 241:4	167:3,13
163:21 166:9	252:14 254:1,5	particle 226:25	168:22,23
166:15 167:8	255:7 259:9	283:24 284:3	170:8 171:8,21
167:15,20	261:2 262:4,20	particles 228:5	172:12,18,22
169:8 173:8	263:25 264:14	228:19,22	173:9,10,25
174:5 175:2,5	265:9 266:15	229:10 230:3	182:22 218:4,6
175:10,13,15	266:20 267:7	286:2 290:6	218:9,21,22
176:1,7,19,22	268:14 269:9	particular 51:7	219:3 241:17
176:25 180:7	269:14 270:10	51:8 54:12	242:6,11,14,15
180:10,12,15	271:5 272:21	55:25 56:1	243:16 247:9
184:19,22	272:24 273:4	99:20 104:6	286:18 287:11
188:3,6,15	273:15 275:10	203:16 263:13	pathway 96:21
190:16 191:7	275:13 281:20	273:10,22,23	279:9,9,11
192:5,17	283:3,8 284:25	particularly	281:10
193:20 195:6	285:2,4 287:13	40:6 44:22	pathways 81:20
196:7,9,12	289:10 290:2	108:15 239:20	99:1
205:13,25	290:12,21	257:8 263:14	patient 40:16
206:9,11	292:9	parties 291:18	40:20 162:11
207:17 208:6	parfitt's 21:8	partly 50:17	patients 39:23
209:1 211:22	parity 157:14	187:14 288:7	40:4 63:6,9
213:1,18 216:4	237:9,10	parts 12:18	patrick 3:4
222:19 225:9	245:17	197:14	pattern 87:20
225:24 227:13	parsing 150:8	passage 203:19	patterns 102:10
228:11 229:17	part 6:19 9:24	289:7,12	103:10 105:6
229:24 230:13	10:5 52:22	past 15:10	payment
230:19 231:21	99:13 105:12	145:10 162:8	121:24
231:23 232:2,4	121:23 122:19	194:14	pdq 4:18 41:10
232:10,19,22	122:21 170:17	patency 168:20	41:15 42:1,22
233:8 234:11	275:11,25	168:22 169:2	42:25 43:1 44:9

[pdq - please]

Page 52

44:16,18 47:6 256:13,19 peer 24:13 25:14,16 26:24 27:2 28:25 30:1 62:18 115:5,7 116:24 232:15 penalties 292:22 293:6 penalty 291:20 pending 9:5 penninkilampi 45:7,20 148:4 185:23,24 198:10,16 199:8 220:24 222:15 223:14 235:6 240:13 245:25 246:3 250:20 pensacola 2:14 people 19:14 51:1 108:5,8,18 109:3 111:24 129:3 139:24 162:7 208:15 223:21 percent 16:23 48:19 106:9,10 106:12,14 108:24,25 123:12,15,18 124:10,10 127:15,18 128:1,2,22 130:12,19,20	131:1,2,3,5,19 131:19,21 134:15,16 141:20 142:4 149:18,20 196:4,15 198:7 198:9,18 199:4 212:13,15 220:5,8 238:1 251:17 257:14 percentage 16:16 17:9,12 17:17 71:11 260:1,3 perez 219:4,11 perfect 43:12 perform 115:10 168:21 263:4,5 performed 72:14,22 73:9 231:20 263:1 performing 116:1 perineal 44:11 144:22 146:1 174:20 196:6 196:17,18 220:2,12 221:6 225:1 226:16 231:7 234:8,20 245:4 251:15 256:18 257:7 257:15 282:7 284:20 perineum 245:6	period 140:11 179:2 182:25 210:5 271:3 periods 143:9 177:22 peripheral 32:15 perjury 291:20 292:22 293:6 permit 262:14 peroneal 229:3 268:12 290:17 person 11:6,8 38:16 140:8,9 140:12 142:17 177:23 197:13 person's 27:8 274:24 personally 24:24 72:6 78:18 264:16 persons 197:13 persuasive 52:17 pertinent 277:12 pfas 280:1 pharmaceutical 203:15 phone 11:7 picking 269:10 piece 162:23 pile 34:20 pills 38:25 place 25:22 88:15 166:7	197:13 219:16 291:7 places 272:11 287:5 placing 52:22 plaintiffs 2:9 2:17 13:8 21:8 116:21 119:6 120:21 133:16 208:1 231:14 270:6 274:16 274:18 plan 61:11 62:1 plantation 1:20 plausibility 55:23 56:10,24 62:25 67:20 76:13 93:4 125:10 162:24 227:20 230:7 262:5 278:8 plausible 59:23 76:16 125:7 126:1 172:16 172:25 173:5,6 173:10,23 174:1,3,7 218:20 279:9 plausibly 285:24 play 94:5 please 8:19 9:1 21:1 108:6 116:7 130:4,6 159:15 175:7 178:3 188:4
--	---	--	--

[please - powder]

Page 53

212:7 243:9 262:20 273:16 281:25 292:11 292:16 plot 251:3 254:25 255:1 plus 15:8 194:9 242:3,3 point 11:16 12:13 27:12 56:23 67:3 78:8 86:5,11 88:13 90:12 91:22 109:17 119:8 119:10 134:13 136:18 137:10 137:12 142:12 143:4 145:21 146:9,9 147:20 148:15 149:2,3 150:14 151:7 151:10,14,16 176:14 182:10 194:10 197:3 198:15 201:10 209:18,24 210:11,14,17 210:23 212:6 212:22 215:15 234:10 240:4,5 244:12 250:25 260:23,25 275:8 pointed 157:25 167:11	pointing 143:16 185:17 189:3 192:21 193:24 points 56:22,23 62:25 185:11 polarized 73:6 polymorphisms 224:23 pool 197:7 199:12 251:16 252:22 253:17 253:18,22 pool's 156:3 pooled 26:10 44:24 45:1 46:21 81:16 85:6 140:25 141:4 143:16 144:2 146:22 159:8 178:25 181:1 182:4,9 182:14 183:6,7 183:11,12,16 183:16 185:8 193:5 198:25 212:15 235:2 235:22 253:2 253:10 255:9 286:20 pooling 183:9 185:1,20 222:8 poor 129:9 poorly 283:23 284:3 population 98:11 164:1	198:6 208:21 211:10 populations 163:25 197:4 port 136:10 portion 128:14 224:7 270:4 290:9 portions 52:4 pose 104:25 posed 276:23 position 54:9 177:11 212:22 283:15,20 positive 71:12 71:21 89:10,21 141:13 167:3 195:17 196:5 196:16,25 286:16 287:12 288:11 possibility 95:3 95:7 165:17 176:10 possible 90:7 96:8 97:8,8 133:20 170:8 202:5 203:2,18 203:21 204:16 204:18,20 205:1 206:18 286:16 287:11 possibly 94:5 post 178:5 190:21 191:9	postdate 22:10 22:18 postdates 138:3 postmenopau... 48:24 91:14,20 potential 118:18 120:24 121:1 165:3 228:4,18 229:10 277:23 279:11 280:1 289:16 potentially 79:21 111:11 154:15 286:4 powder 1:7 8:10 12:23 24:2 35:2,3 38:5,5,9 39:3,24 40:5 50:15 68:2 71:15 86:19 89:11,15,22 94:4,10,12,13 94:16,19,25 96:9 97:9 105:9 111:13 167:5 170:22 171:1 171:12 173:25 174:20 190:6 192:16 196:18 208:24 209:10 209:13 212:9 214:18 215:3 216:7,13,18 231:8 234:8,20 245:5 260:19
--	---	--	--

[powder - problem]

Page 54

270:7,21 273:19,22 280:17 281:1 285:19 290:9 292:3 293:3 powders 97:25 170:13 214:25 power 151:4,5 151:12,16,19 153:2 158:10 158:12,15,16 158:16,17,20 176:10 177:3,8 177:11,15,23 178:5,11 179:6 184:17 185:9 185:13,14,16 185:17 186:2,4 186:9,11,19,25 187:11 189:15 189:18 190:9 190:11,14,19 190:19,21,25 191:2,3,9 powered 187:2 187:10 powerful 186:16,19 187:5 powers 158:17 practice 75:2 114:5,10 200:1 practices 1:8 292:4 293:3 preceded 153:1	precedes 105:23 precise 46:13 68:20 200:4 255:14 256:2 predicated 68:4 75:20 278:4 predicating 281:6 predict 26:9 predominant 114:23 preempted 250:10 premenopausal 91:14,19 prepare 10:20 11:2 18:2 prepared 18:4 preplanned 13:15 presence 68:5 69:1 72:2 75:20 196:5,16 280:23 281:6 289:18 present 3:3 62:20 68:6 111:11 158:25 277:22 289:16 292:13 presentation 191:25 presentations 30:12,18,21	presented 30:14 42:3 217:2 276:22 277:15 presenter 30:15 prespecified 163:6 165:20 168:3,4 prestigious 139:5 presumably 90:24 presume 195:16 pretext 64:8 prevalence 98:7 99:25 209:9 prevalent 285:7 preventible 98:14 162:12 previous 10:23 12:5 34:25 42:1 46:4 51:19,21 53:15,18 61:13 65:20 68:6,23 69:13 91:24 99:18 102:5 111:4 152:10 190:18 195:11 215:8,19 216:21 219:17 221:5 232:14 261:8,10 263:12,20	previously 19:4 111:12 117:23 285:14 primary 23:6 116:10 125:4 140:21 208:19 235:5 244:20 245:3 247:6 254:18 261:11 printout 4:16 4:18,22 37:12 41:15 47:22 prior 11:13 54:10,16 64:13 68:11 93:20 184:3 216:16 216:19 234:13 264:17 269:21 273:11,17 priorities 40:16 probability 214:7 261:22 probable 204:19,21 205:2 206:18 probably 15:4 16:11 21:19 34:20 70:13 86:9 90:19 108:1 133:2 148:1 188:24 201:9 247:25 272:22 problem 58:18 70:13 105:1 106:21 175:16
--	---	---	---

[problem - purposes]

Page 55

188:17 proceedings 274:21 291:6 process 24:11 56:12,13,19 93:16 137:22 produce 9:15 produced 9:17 10:7,18 13:24 17:2 18:3,10 133:15 134:21 264:2,5 272:13 284:23 287:23 produces 194:10 product 94:15 170:14 199:25 210:4 234:8 productively 183:6 products 1:7,8 32:6 35:2 105:7 129:19 173:25 292:4,5 293:3,3 professional 63:3,4,5 291:3 professor 18:18 profound 98:24 progesterone 224:21 programming 118:22 promoting 282:14 283:17 promotion 26:6	prompted 70:18 prone 152:22 pronoun 91:3 pronouncing 58:10 properly 291:8 proportion 110:4 proposal 21:24 propounded 291:11 prospective 131:15 179:22 179:24 180:19 235:16 257:13 257:20,24 258:8,17 259:18 prospectively 111:14 prostaglandins 282:18 prostate 31:21 protection 276:9,18 protective 50:9 137:21 149:19 provide 66:5 68:7 74:17 78:21 79:9 81:13,25 82:4 84:6 85:2,2,4 98:12 102:3 112:16 113:1,9 113:21 135:4	144:13,13,18 194:17,18,22 195:9 199:20 201:10 206:14 212:13 217:5 229:7 239:3 258:14 262:17 263:8 264:1 provided 11:25 12:1 32:9 52:17 67:16 70:9 79:3 81:12,18 84:10 89:19,20 118:2 118:21,23 119:18 121:14 193:6 195:22 201:6 223:19 240:23 241:6,7 258:9,10 259:2 259:5 262:17 264:22 272:4,6 provides 53:8 93:6 96:1 153:23 194:17 237:24 288:19 providing 61:18 173:20 201:13 236:17 282:22 public 8:2 30:4 30:8 36:14 58:7 98:1,3,16 162:10 273:18 291:4,25 publication 23:17 24:13	25:15,16 27:3 102:5,22 121:23 122:20 200:4,16 232:18 244:19 245:2 258:15 publications 25:2 26:7,16 28:25 29:7,16 29:19 63:12 241:10 244:10 publish 87:18 241:3 published 23:14 24:1,6 25:4,10 26:16 46:7 62:17 63:11 86:22 114:12 116:15 116:20 133:12 134:8 138:25 139:2,7 199:10 206:23,24 208:11 232:15 268:3 269:18 278:6 pubmed 114:1 pull 60:12 100:20,22 281:21 purported 12:22 purpose 208:19 234:18 purposes 208:18 277:7
---	--	---	---

[purposes - randomized]

Page 56

285:14 pushed 213:14 put 48:6 51:10 86:5 103:13,14 110:18 114:4 120:4 122:20 135:17 222:3 240:17 287:21 291:9 putting 229:3	240:14 245:10 247:14 quantitative 19:9 56:20 57:2 62:24 133:10 240:10 256:6 quantitatively 115:11 quantity 72:4,4 76:3 queries 114:1 question 9:1,6 14:12 17:12,17 17:25 27:23,24 28:12 30:17 41:7,7,18 44:1 45:22 55:15 56:17 57:14,20 59:20,21,25 60:17 61:20 66:18 67:11 72:25 73:11 74:10,11 75:12 75:16,17 77:11 81:3 83:4,8 84:15 86:10 92:17,22 95:2 96:15 97:7,15 110:1,2 112:23 116:9 119:16 121:7 122:12 124:1 128:3,13 135:7 137:15 137:19,20 141:16 142:24 145:16 150:11	153:11 159:2 159:23 162:3 168:7 170:19 173:14 175:18 181:15 182:16 185:19 188:23 198:13 200:3 211:23 215:5,7 215:10,11,13 221:20 225:18 226:6 232:23 233:11 234:15 235:24 236:3,4 236:10 237:6 237:15 240:6,9 242:20 243:5,9 244:2,18 245:23 246:6,9 246:21 247:6,7 250:18,18 259:24 261:24 264:10,11,15 264:17,18,19 264:20 265:1 269:3 278:20 282:4,8 287:16 question's 9:5 questioning 73:5 questionnaire 106:8,10,15,19 107:3,19,20,21 108:9 109:1 110:13 145:6 questions 8:23 10:24 37:4	54:23 86:8 134:3 143:2 145:1,5,5 148:11,12 165:12 169:13 169:15 186:10 206:17 219:6 235:19 237:5 238:3 248:1 250:10 258:22 275:11,14,18 287:14 291:11 quick 70:3 quickly 130:5 235:18 quite 14:12 64:4 135:12 139:2 193:20 quote 216:19 quoted 128:15 178:11 quoting 203:24
q			r
quadruple 157:5,23 qualification 176:24 286:18 287:11 qualifications 141:14 qualified 72:24 73:12 262:24 qualifies 249:13 250:6 qualify 89:18 248:23 249:4,6 249:15,22 qualifying 253:6 qualitative 116:1 240:11 qualitatively 60:2 qualities 240:7 quality 236:20 237:3,3,3,20 239:19 240:1			r r 5:20 28:3 170:1 race 211:12 212:14 213:2 213:13 253:13 rafferty 2:11 raise 151:10,14 151:16 raised 58:5 random 256:1 randomized 20:7 202:23

[randomized - recall]

Page 57

203:15 randomly 108:10 rank 56:6 ranked 54:8,18 54:25 55:5,18 rare 27:25 28:14 223:1 rarity 97:23,25 rate 13:7 48:18 49:6,8 63:23 209:14 rated 63:23 201:3 rather 134:14 rating 239:1,23 240:1 ratings 239:17 240:4 ratio 127:24 128:5,6,8 144:12,15,15 146:5 147:7 149:9,10 150:19 151:3 162:17 163:19 172:10,12 182:9 191:20 222:4,5,7,16,24 222:24 223:1 242:16 243:15 243:15 250:2 251:16 rational 56:9 ratios 44:4 126:8,12 137:7	143:16 164:7 172:17,18 221:18,19,22 221:25 222:10 222:12,15 223:9,12 242:10,21,24 243:6 246:2 247:14 253:14 253:15 288:12 rats 229:22 230:4,5 ray 73:1 rcts 202:22 reach 65:8,12 76:8 196:20 198:8 199:13 reached 205:11 reaction 227:3 read 10:22,23 44:23 52:1,3,4 73:16,17 87:9 88:12 106:20 109:18,21 122:3 131:22 132:5,6 133:18 134:2,23 139:9 139:10 149:11 161:22 170:17 176:2 189:22 196:25 205:16 214:23 216:4 224:13 232:25 241:1,2 244:1,8 244:17 264:18 268:25 278:19	278:20 282:10 287:24 289:8 289:13 290:22 reader 114:19 119:14,21,25 120:20,23,24 121:2 174:24 233:18 reading 74:4 130:2,3 292:15 real 287:8 realistic 128:25 129:6,9 130:13 realize 14:5 really 16:7 21:3 25:5 27:11 47:15 93:3,16 95:19 109:12 111:25 117:3 143:10,14 149:21 159:4 194:7 203:13 219:24 220:18 235:6 244:3 261:7 266:7 267:18 realm 27:5 116:19 reason 20:18 47:17 52:17 80:19,23 87:10 98:5 100:23 102:18 108:4,7 112:2,24 113:17 129:22 170:11 177:12	190:21 235:8 248:2 253:12 283:19 292:17 reasonable 129:4,10 130:23 131:6 132:10 133:1 192:24 237:8 271:9,12 280:3 reasonably 289:17 reasons 80:13 80:22 239:3 rebecca 231:13 recalculated 134:15 recall 11:11 16:22 20:16 25:3 26:18 31:5 31:10,15,17,17 32:5,9,11,24 33:6,9,11,13 34:7,8,13 37:2 37:8 39:24 40:1 42:2 43:17 51:11,21 70:19 71:4,13 98:13 104:10,23,25 105:6 110:6 111:10 112:1,3 112:24 113:2 113:19,24 127:16,23 128:18 129:3 129:12,21 133:10,21
--	--	--	--

[recall - related]

Page 58

134:12,15,16 135:7 152:16 152:22,23 158:20 178:7 187:16,17 282:3 recalled 104:9 129:20 received 15:22 15:23 31:8,9 33:12 58:6 79:2 230:4,5 237:16 recent 32:8 33:9 42:19,23 45:15,23 46:22 51:23 57:12 69:6 90:18 93:5 123:1 138:4 268:19 recently 32:10 43:19 recognizes 277:22 recollection 149:2 recommend 264:6 recommendat... 39:3,4 recommendat... 38:24 39:6 recommends 289:15 record 9:25 21:4,6,7,10 27:8 41:22,24	54:22 58:1,4 61:7 70:8,9 73:6 83:10,12 83:20 98:17,20 109:22,23 115:23,25 117:9,11 137:23 138:2 154:2,4 157:16 157:19 168:6 169:21,24 176:19 184:8 184:11 219:8 219:10,11 241:2 244:8 248:4 262:7,10 269:5 275:4,7 287:18,22 record's 286:10 recorded 156:3 291:13 records 58:7 132:8,11,12,16 recruitment 164:4 redacted 58:19 redactions 58:13,14 redistribute 58:8 redo 56:17 61:23 64:21 reduce 151:2 reduced 173:13 reducing 38:18 162:13	reduction 40:24 refer 48:8 257:21 reference 10:17 44:20,22 78:20 80:6 100:22 118:9,10 151:24 185:23 219:22 256:15 259:14 276:15 284:9 286:19 referenced 119:12 275:20 279:15 283:14 references 10:12,25 43:24 47:6 50:18 79:6 79:8,24 81:17 113:20 161:3 195:11 216:24 244:13 245:14 referencing 80:3 272:23 referring 34:20 46:5 63:10 70:18 74:5,12 166:20 198:22 203:4 225:9 259:15 277:5 refers 259:16 259:17 reflect 14:2,13 14:16 272:1 reflected 12:15 19:15 255:18	reflection 255:12 reflects 14:9 15:5,17 refocus 124:1 refute 57:3 113:6 274:6 refuted 81:21 regard 17:12 275:15 280:16 282:4 283:21 regarded 138:19,20,23 regarding 118:8 266:14 266:23 277:8 regards 224:16 225:4,6 registered 291:3 regulation 6:21 276:1,5 289:2 regulator 268:11 regulatory 206:1,7 275:15 279:16 rehash 64:10 relate 30:18 related 12:22 15:13,18 22:4,6 22:11 23:14 25:1 29:15,19 29:22 30:22 31:21 32:14 35:4,5,12 36:12
---	--	---	--

[related - report]

Page 59

36:15 76:17,19	177:21 179:1	69:24 70:23	110:15 112:22
85:11 108:16	181:5,22	78:4 150:12	115:12,15
119:19 152:12	182:17,21	178:10 204:17	116:2 117:18
246:7 264:10	183:18 186:8,9	275:18 282:8	121:5,10,17
278:3	193:8 223:1	remind 127:4	123:3 126:24
relates 40:7	225:17 236:9	removing	127:10 133:14
204:2 283:16	242:22 243:5	279:22	138:4 147:14
relationship	247:3 250:24	repeat 142:1	152:15 154:6,7
12:23 45:3 56:1	251:23 252:25	replacement	154:13,14,21
62:9 95:14	260:5 267:22	257:2	155:8 156:22
131:23 174:25	reliability	replicate 240:4	157:8 159:14
186:12 214:17	102:11 103:10	report 4:14	160:3 161:5,6,7
215:14 231:7	104:10 105:6	5:18 8:10 10:22	167:19 168:9
288:3,4	105:15 106:2,4	10:22,23 12:15	168:15,16,17
relative 97:21	129:12 233:7	12:16 27:1,10	169:12,14
98:6 106:9	234:24 270:8	27:10 28:2,8,15	176:15,18,20
111:9 291:17	reliable 27:20	31:2 32:9 34:5	176:21,23,24
relevance 17:7	62:20	34:11,17,21,22	178:7,13 184:1
98:1,3 100:20	reliance 102:13	35:1 46:3,4,7	184:7,18
112:23 158:24	102:19 247:23	60:5,10,13,15	186:25 187:18
214:9	271:20,24	61:5,11,13,19	190:18,20
relevancy 17:7	272:1,11,12,13	61:25,25 62:7	191:16 193:7
17:7	relied 64:20,25	64:15,16 65:5,6	194:14 195:11
relevant 17:8	217:14 271:12	65:14 66:4,15	201:9 202:8
18:5 44:5 45:17	272:1	66:19,20 68:6,6	203:7 205:20
45:17 46:3 52:4	rely 52:18	68:23 69:12,14	206:24 207:7
60:8,24 62:12	90:23 115:4	72:8,9,21 74:1	207:11,14
62:20 79:21,25	227:23 240:8	74:18 75:3	208:5 213:17
82:1 84:3,9	relying 68:9,21	76:14 77:2,15	214:21 215:1,6
85:9 89:25 90:1	277:6	77:17,25 78:20	215:15,16
98:16 107:23	remained	79:11,18,25	216:16 217:7
112:21 119:13	226:16 282:7	80:4,5 81:6	218:17 219:21
120:9,14,18	remains 152:23	82:8 83:14	219:25 221:22
126:4,4 142:16	remember 12:9	85:17,22 87:5	222:2,3,25
143:9 159:1,2	29:2 31:7,22,23	91:18,25 92:3	223:16 227:21
165:20 167:21	32:2,21 41:25	99:18 102:15	227:22 231:4,4

[report - results]

Page 60

232:14 233:23 235:22 254:14 254:14 256:5 257:25 258:7 259:16,19 260:6,13,13,14 261:8,10 262:16 263:2,3 263:11 265:4,4 269:22 271:20 272:2 277:5 278:7,12,13,14 279:7,14 280:19,20 reported 76:24 81:19 99:15 102:11 103:11 106:6,8,18,23 106:24 108:3 109:3 111:8 117:24 121:15 124:4,11,15 125:6 126:1 132:8 147:11 147:17 154:24 156:14,19 157:21 168:22 169:4,5 177:7 191:21 193:4 215:3 216:9 220:2 221:18 221:19,24,25 224:3 236:11 242:12 246:25 247:4 254:15 260:17,21	reporter 1:24 8:21 130:1 291:4 reporter's 291:1 reporting 99:19 106:13,14 107:24,25 108:24,25 110:6 125:5 244:20 245:3 reports 11:13 12:21 26:25 27:15,16,19 28:1,4 61:17 72:18 160:10 222:15,16 233:1 238:1 263:19,24 264:12,25 represent 161:17 261:1 represented 119:3 representing 270:6 represents 146:6 252:11 268:21 reproductive 89:12 90:5,15 94:7 147:4 148:16 163:7 168:23 170:9 170:10 174:19 175:22,23	218:5,7,9 247:9 265:20 286:2 reputable 36:21 48:3,4 86:25 reputation 87:7 reputed 208:12 requested 9:23 10:8 requests 9:14 require 114:11 261:14,16,19 required 77:16 131:21 requires 274:13 requiring 245:10 research 19:14 21:25 25:19,21 26:5,12 28:25 29:22 42:23 270:5 researched 245:12 researcher 158:25 researchers 87:18 208:11 229:11 residents 20:11 respect 169:2 respectively 216:13 responded 167:10	response 60:22 61:1 63:1 66:21 67:5,14,14,16 67:21,24 82:19 161:20 162:25 171:16 195:4,8 195:9,19,23 214:16,21 215:14,21 216:2,5,15,17 217:14 262:23 263:8 282:14 283:17 286:3,5 responses 161:25 responsive 79:17 114:1 restate 61:19 100:6 111:17 119:16 restricted 166:4 217:21 218:4 result 163:17 163:18 170:24 189:17 280:2 287:22 resulting 277:2 results 27:19,20 52:16 105:13 110:11 127:17 134:22 140:3 143:20,23 148:5 164:22 164:23 171:23 177:13 178:6
---	---	---	--

[results - risk]

Page 61

182:3 189:20	206:20 220:1	68:1 78:13,15	272:24 275:20
190:10 210:19	223:20,23	79:18,20 80:5	278:11 281:12
211:7,15,15,18	224:2,11	80:15 85:9,23	282:3 285:13
212:9 216:14	225:17 231:5	99:8 100:8	rigler 68:25
216:15 226:5	234:16 235:18	101:25 104:23	72:7 74:6,15
251:14 258:3	260:17 275:5	107:14,19	rigorous 115:7
retainer 13:10	281:15,16,22	109:17 117:16	risk 35:4 37:23
retrograde	287:15 290:10	117:18,21	38:9,18 39:6,7
76:6 168:2	290:14	118:14 119:6	39:17 40:14,20
173:16 227:1	reviewed 10:22	120:11 126:5	40:25 41:2,5
227:24 229:8	11:12,16,22	133:3,9,22	44:13 49:11,14
retrospective	12:2 21:16,19	143:1 150:11	49:16 50:10
105:1	25:15,16 26:24	155:9 158:15	85:10 96:14
retrospectively	27:2 28:25	159:24 160:2	97:22,22 98:6
111:14	37:20 59:5	164:23 166:5	98:15 99:1
return 86:9	62:18 72:6,8,9	168:16,24	101:6,15,17
230:16 272:16	72:10,13 97:17	170:4 175:11	117:13 121:15
292:22	102:2,7,17	175:11 179:5	123:22 124:5
returned 7:9	103:15 115:5	180:15 184:1	125:6,12 126:3
reversed	116:25 134:25	184:14 185:3	128:5,6 149:21
106:11 108:23	135:5 232:15	188:12,13,25	162:12 163:6,9
review 11:13	246:18 272:4	190:15 194:19	163:10,11
20:6 24:9,20,21	272:10 285:14	199:6 208:15	164:11 171:13
30:1 31:16	reviewers	215:19 222:22	171:19 172:6,7
37:23 38:21	24:13	224:5,8 227:24	172:24 173:7
42:19 46:14	reviewing	232:1,13 235:9	174:14 177:10
48:14 49:10	115:15 267:9	236:18 239:5	177:24 181:18
59:11 62:15	reviews 27:16	240:25 241:17	183:1 193:6
70:3 78:10 82:4	81:15,16,24	241:21,25	196:19 200:2
83:25 84:4,11	220:2 223:23	242:6,11,16	201:5,6 204:2
84:21,22,23,25	right 15:7 22:2	247:23 248:7	210:3 212:13
84:25 85:1,23	22:16 34:9	248:24 249:13	212:16 214:18
97:16 102:14	42:15 43:5	249:15,23	215:4 216:8,18
102:17 103:22	44:16 49:23	251:22 257:17	218:17 221:19
115:7 199:24	63:5 64:12 66:3	259:7,21 262:4	221:22,25
205:22 206:4	66:15 67:23	265:24 266:16	222:5,10,24

[risk - sean]

Page 62

223:9 224:6,18 224:22,24 225:2,6,8,22,23 226:11 231:10 234:7,14 237:25 238:1 242:16 245:8 245:10,16 246:12 250:2 260:19,21,22 261:1 273:21 276:22 277:16 278:17,24 279:1,1,12 281:11 285:7 285:24 289:22 289:25 risks 40:21 125:5 174:2 218:21 276:23 rls 1:8 293:3 role 18:18,20 81:21 94:6 room 11:4 rosner 84:16 row 83:14,16 84:16 85:8 86:11 124:7 220:13 rows 80:9 192:10 rpr 1:24 rr 189:16 190:9 220:14,19 249:8	rule 276:12,20 277:8 ruled 204:25 rules 8:19 ruling 69:15,19 279:5 281:8 running 165:16 237:14 runs 174:16,17 runway 64:3 s s 285:9 saed's 270:5 safety 23:6,13 23:18 261:11 sake 222:20 salary 17:4,14 18:1 sales 1:8 292:4 293:3 sample 106:6 106:10,17 107:8,11,13,14 107:15,18 108:2,3 111:23 124:17 140:4 150:13 152:7 152:14 157:21 176:11 185:2,5 186:2,5,9,11,15 186:16 260:2,4 samples 70:21 70:25 71:2,3,12 71:14 109:8 183:23	sandler 102:9 285:9,18 sanitary 245:7 285:25 sas9.4. 165:7 satisfied 258:25 saw 132:23 182:22 217:2 saying 49:21,23 87:21,23 100:23 107:21 134:20 150:9,9 171:22 172:5,8 173:3 185:5 189:24 190:11 207:12 233:17 255:4,8 284:22 290:14 says 37:19 43:18 48:17 54:18 73:17 103:4 105:9 166:18 168:19 202:8,20 215:22 216:5 220:12,14,14 226:23 228:2 230:3 241:1 270:17,20 276:12 277:20 289:1 scale 236:21,23 240:8 scenario 62:13 135:13,13,13	schedule 9:11 9:14,17 schildkraut 76:11 194:24 208:15 246:25 scholarship 43:20 school 18:23 19:13,21 science 65:23 141:24 246:23 sciences 18:19 19:1,9 scientific 27:7 57:1 62:14 87:25 114:6,19 114:21 122:9 263:23 264:13 266:13,23 267:6,12,15,16 267:18 268:1,5 268:9 280:4,14 scientist 265:24 scientists 138:22 205:10 208:13 268:6 scope 60:17 62:1 scopus 114:1 score 237:17,20 238:15,18,19 239:7 scribbled 10:13 se 96:5 113:4 sean 6:12 230:23
---	--	--	---

[search - selection]

Page 63

search 66:5	251:2 253:9	60:9,15 63:6,8	259:8 262:11
79:12,17 80:15	257:7 258:5	68:20 80:9	262:11 269:19
85:2 114:1	262:12 265:12	82:17,21 91:23	270:17,20
second 37:14	265:14,14	92:15 102:13	273:8,11 276:7
37:22 38:20	266:15 273:7,8	102:21 105:10	276:10,12
52:15,21 58:2	285:21	118:7,11,19	285:1 287:16
88:19,21 89:3,4	section 25:21	123:12,14	288:16 289:1
89:6 92:5 97:21	25:23 26:3	125:18 130:16	seeing 166:10
103:16 104:7	27:13,18 37:23	130:20 137:6	212:7 218:22
104:17 106:20	38:18,21 39:12	137:10 139:3	284:7
108:22 110:25	39:16 43:24	141:1 143:20	seem 15:7 82:9
111:1,2 118:18	44:6 74:20,21	144:6 146:19	271:8
121:22 122:21	81:7 89:5 92:5	149:5 152:4	seems 230:8
122:22 123:25	120:13 122:1	153:13 154:24	263:21 271:11
133:25 134:5,6	127:20,22	155:3,17 170:7	seen 9:8,10
134:7 138:15	131:22 140:3	182:23,25	14:8 24:24 42:2
145:10 152:20	149:1 151:22	192:1,6,12,14	72:15,16,18,21
155:3 159:16	160:7,10	192:23 193:2	98:7 117:16
160:17 161:11	164:22,24	194:9 196:7,15	122:8,21
166:3,5,13	196:3 197:1	200:21 207:19	181:19 192:1
168:25 170:5,7	200:18,20	207:24 209:20	segment 278:8
170:18 174:18	214:21 215:5	209:23,25	segments
175:3 176:2	218:14 224:9	211:6 215:21	277:11
178:15 180:16	228:24 233:25	217:22 218:14	select 251:2
188:9 202:14	234:1 244:11	220:24 221:2	252:23
207:8 211:6	244:15 256:18	221:17,25	selected 242:19
212:8,12	262:12 270:4	222:16 223:2	242:21,23
215:16,20,23	270:22,24	224:18 225:4	243:4 245:9
215:24 217:21	277:12	225:18 234:21	250:9,16 251:9
217:23,23	sections 276:16	238:22,23	251:10,22
218:1 226:14	277:4	240:23 241:15	257:12,20
228:2,3,8 230:2	see 21:17 22:21	243:16 246:6	selecting
235:15 236:4	25:20 28:21	246:10,10	146:15
243:25 244:17	37:19 38:18	248:17 251:4	selection
244:22 249:23	40:19 43:14,23	253:8 255:20	234:25 239:4
249:24 250:25	43:25 50:18	256:3 257:16	244:21 245:2

[selection - significance]

Page 64

<p>248:24 249:4 selective 211:1 selectively 174:23 self 102:11 103:10 106:6 106:13,14,17 106:23 108:24 108:25 111:8 169:4,5 send 24:19,20 292:11 sense 52:5 102:7 156:15 156:17 sensitivities 134:13 sensitivity 127:23,25 128:19 130:12 130:25 131:18 134:17 135:10 165:5 sent 292:9 sentence 34:24 49:13 50:12 52:14,20 54:7 88:23 91:10 92:5,6 94:1,20 97:21 98:23 104:7,19 105:3 105:9 108:22 110:3 122:22 126:24 130:24 132:6 140:2 153:14 164:10</p>	<p>166:17 170:7 171:5 174:16 175:3 178:14 179:18,20 180:14 196:3 205:2 209:4 214:15 216:5 224:12,12 225:10 228:3,8 231:3 234:17 257:8,23 263:10 265:14 266:11,18 267:2 273:9,11 273:13 274:8 sentences 92:13 94:21 separate 47:9 126:8,12 148:6 158:6 separately 78:10,11 137:7 september 14:21 series 74:24 75:11 93:9 227:4 275:18 284:5 serous 99:24 266:4 served 33:17 serving 114:7 set 12:22 150:12 186:10 235:4 252:12 258:15 291:7</p>	<p>sets 145:4 settle 34:11 settled 264:8 seven 217:3 several 23:22 34:21 53:6,7 67:15 69:2 80:12 96:19,25 100:11,14,17 135:6 148:3 194:17,18 197:15 206:23 219:5 224:22 233:12 240:10 240:12,18 248:18 250:10 263:13 severe 286:5,8 sex 273:25 shake 8:20 shapes 136:20 shared 219:11 241:7 sheet 292:9,13 292:18,21 sheets 292:19 short 44:8 126:23 181:4 237:14 271:2 shorthand 291:16 shoulders 136:15 show 37:8 139:25 149:1 208:24 212:24</p>	<p>275:23 281:13 281:23 283:1 283:10 showed 90:22 163:8,19 196:24,24 shower 35:3,3 showing 96:12 217:14 shown 90:14,20 277:21 284:4 287:3 289:14 290:6 shows 145:22 193:13 196:21 212:16 side 139:13 sided 14:8 165:1 siemiatycki 263:17 sign 290:22 292:21 signature 291:23 292:8 292:10 signatures 265:17,23 266:7 signed 292:11 292:12 significance 161:10 179:24 180:19 214:9 277:24 279:4 285:17 286:25</p>
--	--	---	--

[significance - sorry]

Page 65

287:2 288:9 significant 125:18 126:18 141:8,22 163:8 165:3,18 171:7 171:12 172:13 177:9,13,24 194:11 198:8 209:25 210:9 212:1,4,16 214:5,19 216:9 216:17 219:2 220:3 223:4 251:24 260:18 262:13 279:25 288:13 significantly 164:11 172:11 185:7 224:17 224:23 225:5 225:14,22 237:24 similar 85:3 106:5 172:18 174:2 183:15 189:17 190:9 211:10 218:21 219:3 223:8 247:14 similarly 39:6 160:25 279:4 simple 246:5 simply 146:4 259:24 sing 292:1	singh 1:17 4:3 4:15,20 5:5,19 8:1 34:18 42:8 52:17 53:19,21 54:7 55:4 57:9 59:1 68:16 129:24 142:22 154:7 237:13 263:17 275:8 275:10,14 281:12 285:13 293:5,23 single 75:3,7 77:5 178:24 179:10 sist 181:5,7 sister 105:5 113:2 132:20 135:9 144:22 145:6,14 146:1 156:16 158:4 164:2 167:24 259:1,1,2 288:10,13 site 98:25 sites 178:14 209:4,8 situation 120:4 six 24:10 186:15,15,18 217:1 sixfold 177:6 sixth 186:16 size 124:17 140:4 150:13 151:5 152:7,14	157:21,23 174:22 175:19 175:24 176:5,9 176:11,12 178:20 185:2,5 186:3,5,9,11,17 245:11 255:10 sizes 176:16,17 skadden 2:19 skadden.com 2:24 skimmed 12:1 208:2 skip 105:12 161:4 slate 2:19 slight 123:21 282:21,23 slightly 124:3 252:1 slow 93:23 slowly 244:25 small 89:10,15 112:7 124:17 154:16 176:16 176:17 224:7 251:5 255:19 smaller 52:23 151:2 smallest 52:15 smith 231:13 231:14 232:25 233:23 263:17 smoking 39:9 40:21 41:2 224:25 225:7	267:24 society 4:21 47:22,25 50:16 50:23 51:5 solely 122:1 solid 226:22 soluble 283:23 284:3 somatic 99:1 somebody 181:18 sonal 1:17 4:3 4:15,20 5:5,18 8:1 34:17 42:7 57:8 154:7 292:1 293:5,23 sonya 1:24 291:3,24 sorry 9:11 11:24 14:5,7 19:19 41:11 54:22 58:17 62:5 72:4 77:24 84:23 85:7,17 86:12 89:1 100:6 104:12 105:17,20,22 110:21 119:9 123:13 124:19 140:22,23 142:1 146:24 154:16 155:6 166:7,9 168:17 174:10 175:1,5 175:8,14 178:1 178:3,4 180:8
--	--	--	---

[sorry - statistical]

Page 66

180:13,16,17 181:9 184:19 188:5 189:8 194:18 196:2 207:12 209:7 215:12,23 219:24 225:15 229:25 255:6 259:4 273:4 278:23 281:19 286:9 sort 18:2 20:21 24:10,22 43:21 54:15,19 82:16 121:7 126:4 192:18 203:13 223:24 253:17 261:5 266:12 277:12 sound 117:1 sounds 78:15 source 58:7 79:5,8 279:15 sources 16:25 87:17 233:13 south 2:13 spans 175:4 238:9 speaking 283:14 specific 12:17 23:16 62:13 86:8 95:20 97:4 99:18 137:15 152:21,24 157:25 168:5	195:1 198:3 213:7 218:16 248:1 267:20 288:18 specifically 88:3,23 97:3 99:6 126:23 153:22 160:4,7 193:14 208:20 228:2,4,15,18 229:2,18 270:1 280:9 290:17 specificity 100:3,8,18 101:4 128:21 134:13,16 specifics 12:14 16:22 31:15 96:22 98:13 206:2 specified 148:8 speed 269:10 269:11 spell 194:25 spend 83:6,7 spent 14:24 spes 135:10 spoken 30:8 square 198:4 squared 198:18 220:7,13,15 223:4 squares 197:9 198:5 stake 116:12	stand 12:11 standard 75:2 114:5,10 205:22 206:6,7 stands 238:14 start 37:17,17 40:23 72:25 100:15 116:22 130:1 162:21 164:20 175:20 185:12 187:15 191:3 203:12 started 18:19 19:21 22:19 158:3 170:14 starting 20:4 69:4 94:1 127:22 132:6 171:5 234:10 260:8 starts 88:23 106:1 175:11 200:10 279:20 stat 197:15 state 81:6 85:24 135:23 141:24 161:21 203:25 211:7 212:2 267:13,15 274:21 290:5 stated 56:22 117:6 121:6 166:25 211:6 279:7 statement 44:17 90:4 92:1	93:1 98:2 99:3 99:5 110:9 161:15 168:12 171:14 183:2 185:18 189:21 203:24 204:5,6 204:9 211:4 214:6,10,24 226:17,20 258:1,3,3,5 261:21 279:16 282:5,20 statements 30:3 30:5,9 36:24 291:12 states 1:3 31:14 44:16 166:23 166:24 226:23 268:11 275:16 276:18 279:25 282:6 293:1 statistic 198:19 198:21 statistical 118:21 125:20 125:22 153:2 161:10,15 164:21 165:1 177:2 179:23 180:18 184:16 189:15 190:7,8 191:5 197:8,16 198:2,11,12 199:14 220:6 223:6 261:6 288:9
--	--	---	---

[statistically - study]

Page 67

statistically 128:6,9 141:7 141:22 151:19 163:8 165:3,18 171:11 172:11 174:24 177:13 190:23 194:11 209:24 220:3 260:18	strengths 53:14 73:12 152:1,6,9 152:22 stress 168:4 282:16 283:18 strike 72:25 126:6 128:13 215:6 244:2 271:2 stroke 95:25 strong 162:4,8 162:9,14,17 163:1,2 197:20 205:19 stronger 205:11,16 strongly 213:14 struggling 211:14 stuck 203:13 students 19:25 20:10,10,12,13 20:14 studies 29:14 42:20 43:22 45:3,11,12,12 46:22 47:2,2,3 47:19 50:20 52:16 53:7,12 62:15,15,16,16 64:25 67:15,16 68:7,9,21 75:9 75:18 76:23 80:8 81:9,14,15 81:19 82:4 85:3 88:25,25 89:9,9	89:19 90:18,20 90:21,23,24 94:17 95:9,22 96:19,25 98:8,8 99:15 111:13 115:12 116:2 131:8,9 134:1,8 134:11 135:16 138:24 144:18 145:2 148:3 152:11 153:1 158:4 159:14 159:20 160:5,7 160:11,15,17 164:10,13 169:3 173:16 173:23 177:5,9 179:22 183:12 183:21,22 184:24,24 185:1,2,6,14,20 186:19,25 187:2,9,12 188:11,24 189:4,11,16,18 189:19 190:1 193:4 194:17 194:18,20,22 195:2,9,17,18 195:20 196:5 196:16,19 197:14,24,25 198:19,22,23 199:1,6 200:8 200:11 201:3 204:12 206:23	208:12,12,16 208:24 211:24 216:16,20,22 216:23 217:1,3 217:13 220:7 220:14,15,16 221:12,23 222:9,9,13 223:9,11,14,19 224:1 227:2 228:4,15,18,21 229:6,14 230:10 231:6 233:14,19 234:13,25 237:2,21 238:14 239:20 240:1,7,13,14 240:18 244:1 245:9,21,25 246:3,14,17,24 247:1,11,12,14 247:17,19 248:9 252:21 253:18 255:5 256:2 257:9,12 260:16,20,22 262:17 263:7,9 268:3,7 271:7 280:20 281:7,8 284:18 288:10 study 5:22 20:5 20:6,6 28:6,9 28:19 44:4 52:23 53:4,9 64:24 69:10,15
---	---	--	--

[study - suggests]

Page 68

75:10,18 76:12 81:13,22 85:22 87:19 90:17 91:11,23,24 105:1,5 113:2 114:21 115:15 117:20 118:1 126:16 127:17 130:25 132:9 132:14,20,23 133:12,21 135:9 136:25 140:4,11,13 143:13,24 144:2,22,24 145:6,14 146:16,18 151:19 152:1,6 152:9 154:24 154:25 155:13 157:7,21,24 158:1,10,12 159:5 160:16 160:20 164:2,8 164:17 165:11 174:12 178:6 178:20,23,24 179:10,15,25 180:1,19,20 185:10,11 187:1,4,6,17 191:4,6,21,22 195:1,15,15 196:20,24 197:4,11 198:15,24	200:11 208:14 208:19,19 209:4,8,16 211:8 217:5 218:8,11 219:12 220:9 221:2,6,9 223:19,22 226:13 229:2,3 229:5,20 230:2 231:11,12 234:18 235:3 236:5,6 237:16 241:4 244:21 245:11 247:4 247:22 248:10 253:16,19 254:8 256:7 257:13,17,21 257:24 258:8 258:17 259:18 263:11 284:21 286:18 287:25 288:6,10,14 stuff 43:11 subgroup 108:20 110:4 165:5,24 166:25 167:13 168:8 172:2 174:18 subgroups 171:9,18,25 172:17 174:13 subject 118:25 120:18 237:4,7	237:11 287:14 subjective 56:12,13,19,25 236:24 submission 261:18,20 submissions 261:15 submit 34:10 submits 24:12 submitted 14:10,10 21:12 21:13,15,17 22:3,9 29:25 34:5 35:1 278:7 submitting 21:22,24 139:24 subsample 146:15 subsection 278:16 subsequent 68:25 69:11,12 69:12,14 87:19 141:11 161:20 subsequently 272:4 subset 149:4 163:4 257:12 257:20,21,23 258:5,7,17,24 259:17 subsets 253:6 substance 6:23 29:25 276:2,6	276:20 substances 289:20 substantially 155:19,20 201:24 substantive 37:18 substantively 82:11 subtype 35:17 36:9 192:25 193:23 subtypes 100:2 100:12,15,17 193:9 265:22 sufficient 65:7 65:12 66:8 143:7 152:11 177:22,25 206:18 suggest 67:9 89:9 95:23 107:1,6 192:20 217:4 234:13 suggested 76:10 91:12 195:18 205:10 241:16 suggesting 53:10 67:4,24 174:18 281:10 suggestion 282:24 suggests 76:11 107:5 131:19
--	---	---	---

[suggests - taher]

Page 69

193:25 suite 2:5 sum 266:12 summary 86:19 216:19 251:16 276:15 276:16 277:15 supplement 34:25 52:11 75:9 138:8 206:3 supplemental 4:14 8:9 12:16 34:17,22 77:1 112:22 121:10 127:10 140:19 178:13 219:21 219:24 230:21 241:12 supplementary 6:14 230:25 240:25 241:8 supplements 138:11 supply 292:12 support 44:10 50:13 57:2 118:22 130:17 264:12,13 284:19 supported 81:20 supporting 279:15 supports 192:15 286:15	sure 9:23 12:19 19:18 21:15 23:18 26:9 28:13 37:15,25 41:19 44:21 49:12 57:16 58:9 59:8 60:12 64:1 69:9 70:5 70:16 74:19 78:12 80:16 82:15 84:2,2 85:1 86:4,6 88:17 91:25 93:13,23 95:12 100:7,13 104:5 107:5 109:19 114:17 117:25 119:7,17 124:2 130:9 132:25 133:23 138:12 140:17 141:18 145:20 147:5 154:12,19 155:15 158:23 159:5 160:18 165:10 172:4 178:21 180:24 186:15 189:1,9 191:17 198:20 210:22 213:16 221:3 233:20 238:16 248:19 253:4 254:17 256:14 283:1 285:3	surface 271:12 surgery 170:15 171:4 survive 111:22 surviving 112:3 112:4 survivor 111:24 survivors 111:10,21,25 susceptibility 98:25 286:4 susceptible 53:23 54:1 182:25 237:1 suspect 129:22 129:23 sworn 8:2 symptoms 95:18 syncing 287:22 systematic 46:14 62:14 81:15 82:3 84:4 84:11,21,22,25 85:1,23 199:23 220:2 231:5 281:16 systematically 108:9 systems 18:19 18:25 19:14 t tab 41:9,9,11 47:21 52:7 57:6	table 6:14 123:2 137:4 140:15,19,25 144:5,6 147:1,3 149:3 153:23 154:16,18 155:14 156:2 191:22,24 194:4,5,16,18 196:1 197:8 198:19 201:3 201:19 209:17 220:10,12,22 220:25,25 221:1,4,13,14 221:17 230:21 230:25 236:14 236:15,16,18 238:9,10,11,14 240:15,20 241:8,12 243:10,11,12 248:14 253:3 254:20 259:16 tables 138:8 194:6 240:25 taher 6:5 45:19 191:10,12,15 191:22 195:16 200:21 204:20 217:2 221:6 222:14 223:15 238:4,5 239:1 239:11 240:3 240:16,17 262:16 273:2
---	--	--	---

[tails - talking]

Page 70

tails 136:11	73:22 74:25	229:20 230:3	290:9 292:3
take 8:25 9:3,4	76:7,8,18,21,22	248:18 251:15	293:2
9:6 29:4 38:20	76:22,25 81:21	256:18 257:3,7	talk 18:17
41:17,20 43:19	83:25 85:10	257:15 267:20	26:10 36:19
53:24 68:18	86:18 91:12	267:21,23	70:17 88:2
70:3 83:9 98:9	92:7,11 94:9,14	268:12,12,21	94:17 98:8
109:22 115:22	99:10,20 100:1	273:11 275:17	126:23 127:21
153:11 154:1	102:10 103:9	277:9,20,21,22	131:12 136:2
159:15 161:16	106:4,13,14,18	278:2,3,10	147:24 152:17
219:6,7 224:13	108:16,25	279:9 280:18	153:25 154:2
227:7 253:5	109:1,3,11	280:23 281:2	156:18 160:6
261:6 271:16	110:6 111:9	281:11 282:7	160:11,25
taken 21:5	113:1,3,11,21	282:12 283:16	165:21 179:12
41:23 54:10	114:12 117:13	283:23 284:2,8	179:13 180:3
58:3 83:11	118:2 119:6,13	284:19 285:6	180:22 182:23
88:24 89:6,8	119:19 120:8	285:23,24	184:6 187:1
98:19 115:24	123:16,21	286:2,12,16	191:14,15,20
117:10 138:1	124:4,11 129:3	287:6 288:5,18	197:12 203:19
154:3 157:18	132:8 133:11	289:13,14,16	207:6,13 269:6
169:23 184:10	134:9 141:13	289:19,19,21	talked 15:16
219:9 248:6	146:21 152:12	289:25 290:4,5	57:11 64:3
262:9 275:6	168:3,13 178:8	290:6,16,17,18	77:15,17,22
283:16 287:17	185:15 189:14	talcum 1:6 8:10	99:9 100:10
291:6,16	193:14 196:17	12:23 24:2 35:2	118:16 126:14
takes 73:22	196:18,18	38:5,5,9 39:3	138:17,21
95:14 271:10	202:5 203:1,17	39:24 40:5 68:2	150:20 156:21
talc 15:13,18	203:21,23	94:19 96:9 97:9	158:19 163:18
22:4,11,24	204:1,10	170:21 171:1	190:18 193:20
23:15 25:1 29:8	205:12 208:20	173:24 190:6	195:7 233:3
30:5,18,22	220:2,12,16	192:16 208:24	238:5 252:24
35:24 36:3,7,15	221:2,6,9,12	209:13 231:8	259:10 270:7
39:11 41:1	224:5,7 225:1,7	234:8,20 245:5	270:11
43:24 44:6,11	226:16,25	260:19 270:6	talking 40:20
45:3 46:9 50:14	227:1 228:5,19	270:21 273:19	41:25 42:12
55:21 68:5,7	228:22,25,25	273:21 280:17	95:13,14 99:7,8
69:1,7 72:2	229:3,6,7,8,14	281:1 285:19	101:21 104:22

[talking - thing]

Page 71

110:8 111:20 116:11 124:18 130:1,5 147:23 158:16 159:19 160:15,16 161:9 170:4 181:12 183:19 186:6 204:22 204:24,24 210:18 215:21 227:19 229:3 248:8,8 255:17 259:14 280:14 287:6 talks 27:10 55:2 93:7 100:8 132:24 140:7 215:1 258:4 277:16 287:4 tanha 6:9 219:15,18 220:1,9,17 223:18 224:4 281:13,21,24 283:14,15 tasigna 32:6,14 32:17 57:10 58:9 taught 20:24 teach 19:21 teaching 19:20 20:5,19,22 team 30:13 telephonic 78:15	tell 33:3,16 73:8 115:14 120:23 123:4 143:22 144:11 173:13 246:22 256:11 277:13 telling 77:11 tem 73:9,16,17 73:18 temporality 59:22 67:20 ten 180:2,21 181:7,8,8,10,23 182:15 183:18 249:25 257:9 term 75:23 93:14,16 95:20 97:2 128:4 144:10,14,17 144:19,20,22 144:24 145:1 145:24,24 146:1 147:6,16 147:21,21 148:14 150:17 183:17 209:10 209:15 233:20 terms 12:14 27:9 65:1 79:12 79:17 81:2 82:2 84:14 87:13 140:4 150:10 157:24 162:8 162:15 186:19 205:1 213:23	terry 193:15,16 193:18,21 terry's 193:5 test 78:25 92:10 172:9 173:12 211:25 212:3,6 212:19,21 213:6,7,10 219:1 tested 70:22 71:12,15,20 testified 8:3 33:18 37:6 54:7 testify 51:13 testifying 72:1 testimony 4:13 28:11 31:1,3,7 31:24 33:10 36:2,7,8 39:25 44:15 49:19 50:7 60:4 61:18 66:1 75:15 92:21 93:20 115:2 118:22 118:24 119:1 119:17 120:17 141:10 150:7 151:15 167:16 191:5 205:14 216:22 227:23 252:7 282:22 291:10 293:6 testing 68:22,22 68:23,24 72:1,7 72:13,14,17,22 73:13,20 78:23	78:24 165:9,10 280:22 tests 125:14,17 164:21 165:1 168:20,21 171:17 173:4 210:8 213:23 text 37:18 78:25 164:19 164:20 166:5,6 166:8 thank 10:3 18:7 24:23 33:4 35:15 38:2,4,23 43:12 61:15 68:1 81:3 83:24 93:25 103:25 109:20 127:1,7 138:16 146:8 152:3 161:8 175:15 176:22 176:25 184:22 215:18 217:24 241:11 257:6 272:25 275:9 290:21 thanks 41:12 theory 210:2 therapies 224:21 therapy 48:24 91:15,20 257:3 thereof 137:21 thing 64:19 78:7 114:11 129:25 133:20
---	---	---	---

[thing - tissues]

Page 72

169:14 181:22	146:19 147:23	202:18 203:3	182:25 183:18
183:15 199:19	148:21 149:25	215:12 288:11	188:11 197:13
201:16 206:20	152:10 153:22	thousand 16:9	198:16 201:10
224:15 230:9	159:23 161:2	33:4	204:12 210:5
things 21:23,25	162:6,25	three 11:1 22:9	222:21 230:7
25:3 39:9,11	168:10 173:24	22:18,19,20	233:22 237:14
40:24 58:19	177:25 189:23	33:19 143:10	244:1 245:1
64:10 87:2,4	191:3 193:13	144:18,25	246:19 247:24
106:22 133:19	194:13 199:10	145:2 154:15	256:12 258:15
149:11 187:8	202:2,2 210:6	158:4 167:22	270:5 271:3
187:10 235:11	210:10 218:24	195:25 272:11	291:7,8,12
266:12 267:13	222:7 223:5	283:9	times 15:6
272:4 287:16	226:21 227:10	threshold 268:4	34:21 48:8
think 11:21	234:14,15	thursday 1:18	50:25 139:8
12:13 18:5	235:21 239:23	time 9:4 11:21	145:13,14
22:19 26:4 31:6	246:5 247:24	13:16 14:10	186:15,16,18
31:21 39:12,19	254:9 259:13	18:16 19:12	208:3 216:10
40:6 46:18 48:2	259:14,15,17	29:2 43:18	231:9 233:12
49:2 51:18	261:4,5 263:2,9	48:11 53:6 57:1	234:20 244:20
54:23 61:16,17	267:19,22	62:17 65:13,20	245:3,4 248:22
64:3 66:2 67:17	269:1 272:14	66:7 68:18 83:6	249:2,12,17,20
68:19,23 73:4	273:9 274:4,11	83:7 93:23	250:5 258:9
73:21 78:11	274:12,22	109:22 119:10	tisi 2:12 14:5
80:20 86:24	280:8 283:8	131:8 136:25	21:2 57:14,21
87:4 91:6 92:24	288:16 289:6,7	140:10 142:15	58:12,16,20,23
96:3,8 97:2	289:12	142:25 152:8	59:2 61:22
99:7 100:19,23	thinking 40:23	153:5,17,20	69:25 70:5,11
101:3,19	93:15 95:24	156:19 158:22	70:15 102:25
102:25 103:3	96:2	158:23 159:14	103:3,5,17,22
109:8 110:8,10	third 92:5	159:24 160:1	103:25 127:4,7
112:21 113:14	238:17 273:9	160:11 177:17	154:13,17
116:9,18	284:2,2	177:19,20	174:10 178:1
119:21 121:6	thirds 168:19	179:5,8,11,12	217:25
121:12 125:20	228:14 260:9	180:4,22,22,25	tissues 229:7
126:3 131:7,12	thought 105:7	181:4,5,6,13	265:19
131:17 143:12	159:7 163:15	182:12,14,17	

[title - tsca]

Page 73

title 103:8 289:1 tobacco 264:2 264:23 today 10:11,21 12:5 26:11 51:17 86:10,13 95:15 112:12 182:2 230:16 280:16 together 61:25 88:24 89:6,8 183:16 185:1 252:22 253:11 253:22 told 38:12 50:22 51:4 210:19 tomorrow 95:16 tons 138:24 took 254:7 top 21:12,17 59:16,19 70:23 144:6 149:8 177:12 209:18 210:18 276:12 285:22 topic 122:19 topical 23:22 23:25 tort 206:8 total 15:9 148:1 148:4 185:25 189:5,12 190:2 195:3 220:16	totality 202:7 203:3 totally 87:24 touch 59:7 towards 34:19 73:18 123:3 184:17 200:13 257:1 town 13:19 toxic 6:23 276:2 276:6,20 289:20 track 17:2 24:7 43:3 269:10,10 tract 85:11 94:7 170:9,10 182:22 218:9 265:20 286:2 tracts 89:13,23 90:6,15,22 125:3 137:8 147:4 148:16 163:7 168:23 170:25 174:19 175:22,23 218:5,7,18,21 218:22 246:16 247:9 tracy 3:5 trading 17:1 traditional 25:16 27:2 42:10 traditionally 141:7,21	trajectories 265:18 transcribed 291:14 transcript 4:19 5:4 42:7 57:8 291:16 292:15 292:18,23 transformation 270:22 271:4 271:17 transformatio... 271:10 translates 97:22 translocation 228:12 transparent 63:22 66:10 67:8 81:1 travel 13:14 286:1 traveled 13:12 13:20 treatment 230:5 270:18 tremolite 75:1 trend 106:11 108:22 195:17 trends 216:2,6 216:10 trial 274:18 trials 20:7 201:17 202:24 203:15,15	triangular 135:25 136:1,2 136:9,10 tried 31:9 244:6 trigger 227:3 282:13 triple 157:4 trouble 199:11 true 99:5 155:24 160:22 201:23 235:10 259:4,5 261:23 291:15,21 293:6 truly 128:19,24 130:11 try 9:4 25:18,22 45:21 61:20 97:6 109:16 133:24 253:16 273:9 trying 17:17 31:12 58:25 60:17 67:7 83:2 84:15,18 142:2 150:11 158:9 165:12 188:17 190:7,8,24 202:13 203:10 204:15 206:3 210:21 211:1 236:3 239:18 244:5 254:9 267:14 269:13 tsca 6:24 276:2 276:7
--	---	---	---

[tubal - understand]

Page 74

tubal 90:25 123:4,14 124:8 124:15 125:2,8 125:12 126:2 137:12,19 157:10,13,14 158:2,11 163:19 164:5 164:12,13 170:12,20 245:14 246:7 tube 265:21 tubes 126:9 141:15 163:5 166:21 167:3 167:13,24 169:6,7 241:9 241:17 242:6 242:11,15 243:16 244:10 259:11 282:13 286:19 287:11 tumor 192:1 265:15 tumors 265:18 turn 23:3 25:7 37:13,16,22 43:5 48:11 49:9 52:11 59:9 62:6 74:18 80:1 98:21 105:13 121:21 133:24 140:15 144:5 164:16 165:25 209:3,17 214:15 227:20	230:18 253:3 256:13,18 260:6 262:2 265:8 266:9 276:14 278:11 279:13 turning 25:13 220:22 221:11 244:7 twice 243:22 245:23 249:3 250:21,21 257:15 258:12 258:20 two 11:1,3,12 12:20 14:7 23:5 23:25 24:4,22 45:2 48:14 54:23 74:25 79:7,20 80:11 83:21 92:13 94:20 105:6,10 133:1 134:2,6 145:2 156:14 163:24 165:1 168:19 169:12 169:14,15 171:24 189:24 195:18,25 210:7 211:5,11 211:24,24 212:2 213:8,21 214:8 217:4 220:1,14,15 221:17,18 222:17 223:3	225:19 228:14 231:9 234:20 242:23 243:6 245:4 251:20 253:5,10,22 257:4 258:9,22 259:1,3 260:9 261:9 262:13 type 27:7 28:16 165:4 190:15 types 35:6,22 101:22 198:23 265:16 266:1 typical 247:16 263:22 typo 163:12 189:7 u ucsf 264:4 uh 104:24 118:20 123:9 ultimately 260:2 umbrella 81:15 220:1 223:22 225:17 281:15 281:22 unable 151:8 unadjusted 135:15,18,23 158:16 unclear 47:18 226:16 282:7 under 6:22 32:10 48:15	57:18 80:10,11 80:12,18 105:20 113:12 118:7 151:19 160:17 205:23 214:8 276:2,6 276:20 278:24 289:19 291:9 291:20 292:21 293:6 undergo 170:12 170:20 undergoing 115:6 undergone 123:14 underlying 82:20 97:18 153:20 169:3 253:25 254:4 254:12 255:12 underpowered 213:24,25 underreported 107:2 understand 8:8 24:11 28:12 41:6 51:3 57:19 57:25 59:2 60:17 72:11 73:23 77:13 88:14 119:17 119:22,25 129:8 140:8,9 142:2,3 198:21 204:15 206:6
--	---	---	--

[understand - uses]

Page 75

208:18 210:21	united 1:3	41:1 48:23	221:2,6,9
220:18 233:19	31:14 268:11	54:20 62:7 63:4	224:25 226:16
244:3,6 252:9	275:16 279:25	63:6,13,15	234:14,21
255:3 256:1	293:1	85:10 89:11,15	235:25 248:18
257:19 266:7	university 17:4	89:22 91:12	260:19 268:12
269:4	17:14 19:5	94:19,25 95:15	268:21 273:11
understanding	unmarked	96:9 97:9,24	274:1 276:1,6
58:6 109:5	272:19	102:10,11	276:24 277:22
128:4 173:15	unpack 106:15	103:10,10	278:25 279:24
201:25 250:23	190:8 204:18	104:8 105:6	282:7 285:6,23
252:10	252:2	106:5,6,13,14	286:17 288:5
understood	unreasonable	106:18,23	289:3 292:19
13:6,6 30:16	129:10 276:21	109:1,4 110:7	used 63:16,16
38:17 44:19	278:17,24	110:16,16	63:18,23 64:14
45:14,21 51:20	279:1	111:9 117:13	64:16 66:25
51:22 55:11	unsophisticated	129:19 132:3,8	67:25 79:13
59:6 61:21 62:6	174:24	135:25 136:8	91:3,15 92:10
63:10 64:6,9,9	unsurprisingly	138:11 144:7,9	94:14 123:15
71:1,8 72:3,6	256:17	144:10,14,17	131:19 132:13
72:12 75:22	update 61:18	144:19,20,22	162:8 170:21
78:18 80:1 86:9	65:14 203:6	144:23,24	174:19 209:13
120:1 122:22	268:19 288:13	145:1,17,18,24	241:23 242:5
140:1 141:7,21	updated 37:3	145:25 146:1,1	242:15 257:15
183:13 213:11	37:20 42:17,19	146:21 147:6	257:21 258:24
213:11 234:9	42:23 43:15,19	148:6,14 149:8	user 241:24
267:14	45:6 46:6 66:6	164:4 167:5	users 110:4
underwear	77:16 160:23	170:13 171:12	146:10 147:14
245:7 285:25	updating	183:17 194:1	147:16,21,22
undue 52:22	223:20	199:21 201:8	163:9,9,11,12
unexposed	upward 178:18	203:5 205:1	163:16 210:3
128:21 189:14	upwards 180:1	208:20,24	241:20,20
190:3,3	180:21	209:9,10,10,14	242:8,10
unfortunately	usc 122:1	211:8 212:9,12	243:14,17,20
43:13 88:11	use 6:22 35:2	214:18 215:3	243:21
132:7,7	36:15 38:5,5,9	216:8,11,13,18	uses 205:23
	39:24 40:5,19	217:17 220:3	289:15

[using - we've]

Page 76

using 38:24 39:3 41:4 56:10 58:7 64:5 95:21 97:2 105:5 124:11 131:17 134:12,17,20 136:13 167:12 168:7,11,11 170:14 199:25 199:25 210:4 223:11 236:21 238:14 240:8 242:13,14 273:19 usually 20:5,16 27:10,14,15,25 54:11 198:6 199:22 200:6 uterine 35:10 282:13 288:17 uterus 229:4	261:15,20,21 variable 132:1 variants 157:12 various 99:16 100:2 163:10 183:6 250:13 277:17 vegetables 149:20 162:14 verbal 8:19 verbatim 14:4 23:4 25:18 39:8 61:10 105:8 134:12 136:10 172:15 179:3 179:25 189:13 212:18 265:16 version 88:10 160:23 227:11 227:16 282:22 versus 28:14 31:14 33:7 111:14 124:18 124:19,23 136:9 158:17 163:14,16 183:17 258:12 vi 143:22 144:19 viagra 4:23 51:11 52:9 videoconfere... 1:16 view 233:6 270:8	viewpoint 100:18 viewpoints 54:17,20,25 55:3,12,18 56:21 62:22 63:24 67:22 100:7 vimercati 74:22 74:24 vioxx 264:23 visit 40:12,16 vitae 4:12 18:9 vitonis 118:21 vitonis's 121:4 vitro 62:15 voice 21:3 volume 1:1 292:1	120:24 121:2 126:16,23 133:3 148:12 149:10 165:14 181:17,19 182:19 190:11 199:24 203:17 205:21 206:17 215:15 225:15 225:16 227:20 228:1 230:9,18 237:10 254:8 268:25 271:18 276:14 287:21 wanted 86:3 154:18 230:15 230:17 252:16 288:15 wants 8:25 washington 2:6 way 19:11 56:21,22 62:24 87:11 101:3 113:5 115:3,10 115:14 126:18 130:21 145:24 151:9 167:14 168:9,19 196:2 199:20 208:4 217:11 228:14 238:18 260:9 ways 136:13 172:1 230:10 we've 53:5 64:10 77:17 98:7 158:19
v		w	
v 2:12 vagina 229:4 282:12 286:1 vague 149:1 validate 132:8 value 115:20 141:21 165:2 213:6,7,9,20 214:2,5 245:10 245:16 246:10 247:18 261:20 values 136:4 161:11 213:21	31:14 33:7 111:14 124:18 124:19,23 136:9 158:17 163:14,16 183:17 258:12 vi 143:22 144:19 viagra 4:23 51:11 52:9 videoconfere... 1:16 view 233:6 270:8	w 2:20 5:12 28:3 127:2 292:11 293:25 wait 228:11 262:20,20 want 8:24 9:3 18:16 25:2 27:6 28:12 31:22 55:12 59:2 64:10 68:20 69:25 71:6 73:19 82:16 83:6,7 86:6 91:25 103:17 112:10 120:20	w 2:20 5:12 28:3 127:2 292:11 293:25 wait 228:11 262:20,20 want 8:24 9:3 18:16 25:2 27:6 28:12 31:22 55:12 59:2 64:10 68:20 69:25 71:6 73:19 82:16 83:6,7 86:6 91:25 103:17 112:10 120:20

[we've - women]

Page 77

181:19 194:13 208:3 252:24 268:7 270:7 283:10 286:20 weaknesses 73:13 weather 13:15 web 43:13 website 39:19 website's 37:4 wedded 176:16 week 139:10 145:15 146:22 231:9 234:20 243:22 245:3,4 245:23 249:3 250:22 257:16 258:10,12,20 weekly 144:21 258:11,12 259:22 weeks 69:20 weigh 56:21 72:25 73:12 101:3 115:11 weighed 67:12 67:17 weighing 266:25 weight 26:6 39:5 40:23 50:12,19 53:12 62:8,10,11 63:17,18 65:3 66:21 67:4 135:17 136:15	143:18 251:24 255:12,25 256:1,8 262:23 weighting 67:13 255:23 weights 136:11 256:4,5,6 weinberg 285:8 went 10:24 25:6 51:17 90:8 120:3 150:24 219:11 221:15 236:1 240:2 246:17 251:12 251:25 wentzensen 5:7 86:16,18 87:8 88:9 89:14 91:18 98:21 101:23 102:9 138:18 wera 5:24 187:22 wernicke 28:2 westlaw 52:12 whatever's 76:20,23 whi 143:21 144:19,24 156:1 158:4 159:3 167:23 177:20 white 208:25 209:11,23 211:9,14 212:15 216:8	whitmore 194:24 whitemore 238:13,17,22 239:21 wide 143:17 192:9 193:3 255:17 wider 136:12 146:15 255:24 widespread 97:24 wilks 33:7 withdraw 83:4 83:7 witness 4:3 41:17,21 57:17 57:23 58:11 59:4,8 68:13,17 69:19,23 70:6 83:19 88:12 103:2,7,15,20 105:24 106:3 137:2 159:22 166:13,16 175:8,12,14 188:5 192:6 196:8,11,14 219:5,13 232:24 269:13 275:9 291:8,10 292:1,15 293:19 witnesses 115:1 wolf 263:18	women 89:12 89:22 90:5,15 90:25 91:14,14 91:20,20 94:23 95:17 96:8,10 96:16 97:9 107:1,9,12,16 107:22 111:21 112:8,17 123:8 123:13,14 124:7,14 125:1 125:2,12,13 126:1,9,9 137:11,13 140:5,25 144:11 147:4 147:21 148:15 156:4 163:4,7 163:19 164:3 166:20 167:3 168:22 169:5 169:11 170:12 170:20,24 174:19 175:21 175:22 178:19 178:22 180:1,4 180:21 182:19 182:20 183:4 184:14 208:25 208:25 209:13 209:19,23 210:18 211:9 212:15,17 216:8,9 218:4,5 218:6,20,21 219:2 234:7
--	---	---	--

[women - yeah]

Page 78

241:8,16,17,24 242:6,10,13,14 243:15,20 244:9 246:16 247:9 252:12 257:15 259:6 259:10,11 273:19 women's 154:23 155:13 155:23 169:2 woolen 6:13 44:25 45:23 230:18,19,20 230:23 231:2,4 231:12 235:6 238:21 239:1,7 240:17 241:23 242:15,18 244:8 248:8,10 248:24 249:5 250:15,19 251:4 254:25 257:17 258:24 259:16 260:2 260:11 woolen's 45:15 45:16 worcester 1:21 word 77:4,5 129:8 168:4 286:7,9 wording 66:24 words 101:5 130:2 164:21 187:4 269:15	work 14:2,13 14:17,20 15:7 15:10,13,17,24 16:17 17:1 19:4 19:7 35:20 63:3 63:4,5,11 87:15 205:5 206:5 233:6 264:12 265:5 worked 138:21 working 21:21 29:21 284:10 works 87:14 203:10 world 25:18 27:6 197:15 worried 226:2 worse 93:11 284:8 worth 15:6 write 202:7 285:22 writing 70:16 writings 12:21 written 199:17 wrong 58:10 103:5 152:3 166:7,7 196:10 196:11 wrongly 88:10 wrote 77:4 91:22 wu 6:16 98:12 194:24 239:6 247:19 248:10 248:12 251:13	251:13,14,24 252:18 253:3,3 253:24 254:3 254:17 255:16 x x 4:1 5:1 6:1 7:1 55:22 73:1 80:18 99:21 251:20 xs 80:10 y y 55:22 99:21 251:5 yeah 11:23,24 14:9,19 16:2 18:21 19:6 20:8 20:20 22:1 24:3 24:3 25:17 27:4 27:15 28:3,18 29:2 30:13 32:8 32:11,14 34:13 37:8 41:21 42:14,18 43:3 43:21 44:1,24 45:16 46:12,25 49:7 50:2 51:2 52:4 53:14,20 54:21 55:17 56:16,18 59:24 60:5,19 63:14 64:10 68:21 70:6 71:4,6,10 71:10 72:10,15 73:20,25 74:13 74:17,23 76:14	77:20,20 78:1 79:19 80:20 82:8,12,20 83:2 83:19 84:7 86:2 90:3 92:14 93:21 94:14 95:8 97:20,21 99:11 100:9 101:13 102:1 102:17,17 103:7 104:21 106:3,23,25 107:17 110:1 110:10 111:5,7 112:5,15,23 113:9,16,19 114:3,3 116:8 117:6 118:3 119:10 122:4 124:16 127:14 127:20 129:2 129:13 130:22 132:19 134:23 135:4 136:20 138:22 139:10 140:10 142:1 144:8,13 145:4 146:14 147:2 147:14,18 149:1 150:2,21 152:17 153:15 153:24 154:22 155:11 156:10 157:1,6 160:4 162:6 163:16 163:16,24
---	---	---	---

[yeah - zoom]

Page 79

166:2,16,16,22	255:11 259:12	249:2,12,16,19
168:18 169:11	260:13,15	249:25 250:5
177:14 180:7	263:19 265:11	253:6
181:2,12 182:7	266:21 268:19	yesterday
182:7,16	271:6,15,21,23	10:25 13:14
183:24 185:22	272:8,14 274:9	younger 164:3
188:1,22	277:11 279:7	164:3
191:19 193:4	280:19 281:4	z
193:17 194:12	282:21 283:13	zachary 2:20
196:23 199:3	286:11 287:2	8:6 292:11
199:17 200:20	288:6 289:4	293:25
201:21 202:25	year 14:21	zachary.martin
204:7,11,17	16:17,19,20	2:24
205:9 206:2	17:23 20:9,10	zack 9:21 43:7
207:21,23	20:11 24:9 48:7	64:1 139:22
208:2,22 212:8	48:19 102:21	166:9 180:8
213:4 214:13	110:15 111:18	184:19
214:22 216:1	143:24 156:14	zoom 3:3,4,5
217:8 218:15	158:23 183:18	
219:22,23	years 20:4 31:4	
220:25 221:7	33:18 48:20	
221:10,14	51:16 95:14	
222:6,6 224:6	140:8,9,12	
225:12,12,16	142:15,17	
227:18 228:17	143:10 144:21	
228:17 229:16	144:25 145:3	
235:17,24	146:2 153:19	
236:15,20	155:5,16	
238:10,12,24	158:24 159:1,2	
239:10 240:22	160:12,13,19	
242:4,19	177:23 180:2	
243:13,18	180:21 181:7,8	
244:18 245:15	181:8,11,23	
247:11 250:17	182:15 194:9	
252:16 253:7	216:12,12	
254:2,13	248:21,22	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.